

MONDAY SPORTS
NEL RESULTS
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Table with exchange rates for various currencies including Australia, Belgium, Canada, Denmark, France, Germany, Greece, Hong Kong, India, Italy, Japan, Korea, Luxembourg, Netherlands, New Zealand, Norway, Singapore, South Africa, Sweden, Switzerland, Taiwan, Thailand, U.K., U.S., and West Germany.

ESTABLISHED 1887



Lee Troupes the Opposition
Prime Minister Lee Kuan Yew, right, at a news conference Sunday after his People's Action Party defeated a strong opposition drive in Singapore's parliamentary elections. With him is Goh Chok Tong, the first deputy prime minister. Page 2.

Schism Developing Between Nations On Monetary Policy

By Ferdinand Proitzman
International Herald Tribune
FRANKFURT — Increasingly divergent views between European nations and Japan on the near-term strength of the dollar are feeding speculative selling that is weakening the yen.



Archbishop Desmond M. Tutu on Sunday as he urged a boycott of elections in a Cape Town sermon.

Tutu Asks Boycott of Elections

Archbishop Tutu, who received the Nobel Peace Prize in 1984, said he was aware of the harsh penalties, under emergency regulations, for issuing such a call. But he accused the government of trying to intimidate people into voting.

Kiosk

Jewish Settlers Hold a Protest

JERUSALEM (AP) — Jewish settlers in the occupied West Bank demonstrated Sunday to demand government permission to shoot at Palestinian stone-throwers.

Capital Outflows Pressure Yen

By Patrick L. Smith
International Herald Tribune
TOKYO — Despite a pause Friday in the yen's swift depreciation against the U.S. dollar, surging demand among Japanese investors for dollars and other foreign currencies is likely to continue exerting strong downward pressure on the yen this week, analysts here said.

Walesa Warns Against Any New Strikes

GDANSK, Poland — Lech Walesa told workers on Sunday to stop criticizing his efforts to speak with the Polish authorities, and he pledged to suppress any attempts to foment labor unrest.



Workers in the Baltic port of Szczecin marching Sunday after ending their strike.

MONDAY Q&A

Richard N. Gardner, a former diplomat, discusses Soviet interest in international cooperation. Page 2.

For Kurds in Exodus, Sense of Loss Returns

By Alan Cowell
New York Times Service
CUKURCA, Turkey — They were, they said, the fortunate ones, who had come from a land at war and had survived.

Indonesia Wonders if Timber Boom Will Backfire

By Michael Richardson
International Herald Tribune
SAMARINDA, Indonesia — Throughout the day and night, the river that runs through this provincial city echoes with the sounds of huge blades cutting or shaving logs in the timber mills and plywood factories along its banks.

As the Olympic Run-Up Begins, Seoul Shifts Into Overdrive

By Fred Hiatt
Washington Post Service
SEOUL — It is late Sunday afternoon in the South Korean capital, for most residents, the close of their one-day weekend.

Economy Is an Edge For Bush

By Peter T. Kilborn
New York Times Service
WASHINGTON — People could wonder why Michael S. Dukakis bothers running.

The U.S. Presidential race is likely to be close in pivotal states, notably California. Page 3.

People do not win elections just because of the economy, of course. But in presidential campaigns of this century, incumbents who have had the economy on their side have almost always won.

Moscow Shows Interest in Playing Role in World Economy

Richard N. Gardner, professor of law and international organization at Columbia University, is attending a meeting in Moscow this week called by the Soviet government to discuss ways of strengthening the United Nations system. He was deputy assistant secretary of state for international organizations under the Kennedy administration and U.S. ambassador to Italy during the Carter administration. He spoke to Barry James of the IFT staff.

to wait and see whether they will stop exporting revolution and seeking the collapse of capitalism. If this is a new approach, we should welcome it.

Q. From what you say it seems as though the Soviets want to join capitalism, not bury it.

A. Well, we have just had a meeting in Paris of an Aspen Institute group, to which two Soviet representatives came for the first time. All of us were impressed by the message they brought, which is this: The Soviets have come to the conclusion that the success of perestroika requires that the West should not have an economic crisis. They wish to enter the process of managing the world economy in a responsible way, and this means, eventually, their taking a place in the General Agreement on Tariffs and Trade, the International Monetary Fund and the World Bank.

They didn't say they want to come in right now, because first they want to push ahead with their new pricing system, perestroika, autonomy for enterprises, a market economy and a convertible ruble. This will take five or 10 years. But I believe Mikhail Gorbachev sees eventual participation in these international organizations, which will of course lay down tough preconditions, as a means of reinforcing the domestic reforms he wishes to undertake.

Q. Yet, while the Soviets express increasing support for the United Nations, Vice President George Bush calls the organization an unreal place, a place torn by tensions.

A. I know George Bush. I like him and I spent a fair amount of time with him when he was ambassador to the United Nations. What he is saying now is totally at odds with what he was saying then. He is saying these things at the very moment when the United Nations is beginning to

work the way every postwar American president has wanted it to work.

Q. How so?

A. It has helped broker the Soviet withdrawal in Afghanistan. It has helped bring about a cease-fire in the Gulf. It is likely to bring about a settlement of the war in Western Sahara. It is bringing together the Greek and Turkish Cypriots for the first serious discussion in many years. It has a fair chance of bringing about the withdrawal of Cuban troops from Angola and a settlement of the Namibia problem. And maybe it will help achieve a withdrawal of Vietnamese troops from Cambodia. The UN makes it easier for these things to happen because it gives countries a face-saving way out.

because our failure to pay what we owe the UN and to match Mikhail Gorbachev with constructive responses is isolating us not only from the Third World but even from our closest allies, who are frankly fed up with our behavior in international organizations.

Ronald Reagan in a few weeks time will be making his sixth appearance before the UN General Assembly. That's more than any other president. He obviously derives great political benefit at home and abroad by making such speeches. So imagine the reaction of the other 158 member nations when the United States refuses to settle its arrears — \$460 million for the regular budget, \$70 million to pay the salaries of those courageous men wearing blue helmets, and also the money we owe those UN agencies that are going to be more important than ever if we are going to deal with problems such as the greenhouse effect or the ozone problem, or future Chernobyls or the drug trade.

Q. That may be so. But the Reagan administration is obviously hostile to the organization. It owes more than half a billion in dues. So what should it be doing?

A. The United States should start paying its arrears and exercising leadership.

MONDAY Q&A

Lee and Party Defeat Strong Opposition Bid

By Keith B. Richburg
Washington Post Service

SINGAPORE — Prime Minister Lee Kuan Yew and his governing People's Action Party maintained their nearly unanimous lock on Parliament in elections Saturday, despite the strongest opposition challenge in two decades.

Final results announced early Sunday on the state-run television showed that the party won 80 seats in the 81-member chamber, and the opposition would be held to the single seat it had in the last Parliament.

The opposition had fielded 70 candidates, its largest ever, and had hoped to win up to seven seats.

The governing party's popular vote appeared to slip slightly from the last elections four years ago, down a little more than one percentage point, to 61.8 percent. Several winning PAP candidates said after the voting that they were disappointed they had not fared better, and promised to work harder to win over the opposition voters in their districts.

In Singapore, the popular vote total has been considered more significant than the actual seats, since the governing party has always claimed to have the mandate of the vast majority of the country.

The party was shocked in 1984 when it won 63 percent of the vote — 12 points down from the 1980 election — and analysts this year said that any further loss would represent a serious political setback. Some analysts had set 60 percent as a "benchmark" figure that the party needed to win to maintain its credibility, and they predicted that anything less might force a major internal purge.

In the most hotly contested district, that of Eunos, a three-member team from the governing party narrowly edged out an opposition Workers Party slate headed by a former solicitor general, Francis Seow. The government jailed Mr. Seow for 72 days earlier this year, along with other anti-government dissidents, under Singapore's sweeping internal security act.

Analysis had given Mr. Seow a good chance of winning because of a popular backlash over his arrest. Mr. Seow had emerged as the opposition's most articulate candidate, attracting huge crowds to hear his often humorous denunciations of Mr. Lee and the governing party.

The party's team in Eunos won 50 percent of the vote, and Mr.



A BOMB'S AFTERMATH — Officials in Karachi, Pakistan, investigating after an explosion Sunday on a platform at a crowded military railway station. Twelve people were injured.

4 French Navy Ships Are Leaving the Gulf

By Youssef Ibrahim
New York Times Service

PARIS — France announced Sunday it had ordered four of its navy vessels in the Gulf, including the aircraft carrier Clemenceau, to return home.

The move brings down the French naval force in the Gulf region to seven ships.

The announcement came two weeks after a cease-fire between Iraq and Iran came into effect, ending eight years of fighting between the two neighboring enemies.

Iran had been pressing Western countries including Britain and the United States to reduce or eliminate their naval forces in the Gulf, Iranian experts said, in order to give the regime of Ayatollah Ruhollah Khomeini some tangible proof that the cease-fire had brought real gains for Iran.

The ayatollah had repeatedly vowed not to end the war until a military victory was achieved against the regime of President Saddam Hussein of Iraq.

But in an abrupt turnaround in August, he proposed acceptance of a cease-fire with Iraq.

The French defense minister, Jean-Pierre Chevènement, said the pullout was effected in view of "new prospects for peace in the region," but he added that France had no intention of ending its presence in the Gulf.

Mr. Chevènement was visiting Kuwait when the announcement was made, and French officials said he informed Kuwaiti authorities of the move beforehand.

The Socialist government of Prime Minister Michel Rocard has been careful to keep the improvement of relations between France and Iran under tight control.

French officials implied that the return to normal relations would be affected by the continued detention of hostages of any nationality in Lebanon by pro-Iranian Lebanese terrorists.

7 Die as Cairo Building Falls
The Associated Press
CAIRO — A four-story apartment building condemned as unsafe collapsed Saturday and brought down two houses next to it, killing 7 people and injuring 11. The building had been ordered demolished, but the occupants had refused to evacuate it.

Hundreds Die as Flooding Spreads Across Bangladesh

Washington Post Service

DHAKA, Bangladesh — Floodwaters spread to cover more than two-thirds of Bangladesh on Sunday, bringing fear and destruction to a people who are accustomed to annual flooding.

Officials said that more than 33,000 square miles were covered by water that has overflowed from the country's three largest rivers and their tributaries, destroying crops, homes and lives.

ECONOMY: For Bush, Prosperity Offers Important Edge Over Dukakis

(Continued from Page 1)

promoting neither big government nor small, but frugal government. In a race as close as this one, both rest their hopes on the votes, not of the poor or of the rich, but of a fickle middle class.

Mr. Dukakis's strength in keeping ahead of Mr. Bush shows up in poll after poll, persuading many political experts that middle-class voters believe he offers them something the Republicans do not.

They say a striking feature of 1988, setting it apart from previous election years, is middle-class anxiety about the future economy that belies widespread contentment about the present.

"There's a lot of data showing the public caught up with a conflict between current economic conditions and concern about the future," Mr. Field said. "It's the first time I've seen that in nearly 50 years of measuring public opinion."

The anxiety, concentrated among many of the 30.5 million families with annual incomes of \$20,000 to \$50,000, is surfacing following the changes that swept through the economy in recent years, like the rise of the working woman and explosion of budget deficits. It reflects worries over the soaring costs of college tuitions and medical care, the next recession's toll on debt-laden families, the an-

WORLD BRIEFS

Solarz Is Dubious on Burma Regime

BANGKOK (Reuters) — Representative Steven J. Solarz, a U.S. congressman just back from 24 hours in Rangoon, said that "the government has completely lost the confidence of the people."

Mr. Solarz, a New York Democrat who is chairman of the House subcommittee on Asian and Pacific affairs, met President Maung Maung, Prime Minister Tun Tin and other senior members of the ruling Burma Socialist Program Party. He said that the next few days should show whether the future of Burma would be determined peacefully or through a bloodbath.

He also met emerging leaders of the opposition such as Daw Aung San Suu Kyi, daughter of Burma's founding father, U Aung San; U Aung Gyi, a prominent dissident, and the former prime minister U Nu.

Serbians Protest Unrest in Kosovo

BELGRADE (AP) — More than 100,000 people attended rallies this weekend in four Serbian towns to protest what they described as harassment and intimidation by ethnic Albanians in the troubled southern Kosovo Province, official reports said.

For the first time, a rally of nearly 70,000 on Saturday at Smolcero, 50 kilometers (30 miles) south of Belgrade, was formally organized by the Socialist Alliance, a Communist-led mass organization. Other rallies were held in Crvenka, Kovin and Sombor.

The rallies have been held in defiance of a call from the Yugoslav Communist Party Central Committee to refrain from taking the Kosovo conflict to the streets.

Death by Starvation Rising in Sudan

KHARTOUM (Reuters) — A senior army officer in Sudan said Sunday that scores of people were dying of hunger every day in the isolated southwestern town of Aweil, and a Khartoum newspaper reported that 8,000 people had died there but did not give a time period.

Relief officials said hundreds of destitute people from several famine-hit southern districts were trekking north in search of food, to towns that had little relief to offer. They said more than 30 people a day were dying in one such town, Al Metram.

The army official was quoted as saying the same number of people died of hunger in Aweil every day as were killed in northern Sudan by floods last month. "The state is concerned with the North and ignores the South," he said. Relief officials said several international aid agencies were trying to arrange reconnaissance flights over Aweil to assess conditions.

For the Record

A federal judge in Utah has dismissed lawsuits seeking \$3 billion from Morton Thiokol Inc. that were filed by Roger Boisjoly, a former engineer with the company. Mr. Boisjoly had warned against launching the Challenger space shuttle in January 1986 but was overruled by Morton Thiokol executives. (NTT)

Deng Xiaoping, 84, the senior Chinese leader, has a prostate problem and is in declining health, a source close to the family said. (UPI)

Pakistani officials say about 90 persons have been detained for questioning in the plane crash Aug. 17 that killed President Mohammad Zia ul-Haq. (Reuters)

Prime Minister Andreas Papandreu of Greece will undergo surgery in London within two weeks to have a heart valve replaced, a spokesman for Mr. Papandreu said Sunday. (Reuters)

Police in Nicosia mounted heavy security Sunday as officials from 95 countries began gathering for the Nonaligned Movement's three-day conference of foreign ministers. (AP)

TRAVEL UPDATE

Moscow Plans to Open Vladivostok

MOSCOW (AP) — The government will soon allow foreigners into the Pacific Coast city of Vladivostok, which serves as home port for the Soviet Navy and has been closed to foreigners for decades, the government daily Izvestia reported.

"This is no accident," the newspaper said Saturday in announcing the change. "First of all, it is a result of the new political initiatives of our country." Izvestia did not say when Vladivostok would become an open city, but an international symposium on problems of the Asia-Pacific region is to be held there later this month.

TAP-Air Portugal will begin flying to Nice and Hamburg in November, the airline said. The flight to France will link Lisbon, Nice and Stuttgart every Tuesday and Friday. The airline also announced the creation of a Hamburg-Lisbon route. (AFP)

This Week's Holidays

Banking and government offices will be closed or services curtailed in the following countries and their dependencies this week because of national and religious holidays:

- MONDAY: Bermuda, Canada, Luxembourg, United States.
- TUESDAY: Pakistan.
- WEDNESDAY: Brazil, Mozambique, Namibia.
- THURSDAY: Andorra, Liechtenstein, Malta, Rwanda.
- FRIDAY: Bulgaria.
- SATURDAY: Belize, Bulgaria.
- SUNDAY: Chile, Ethiopia, Pakistan.

Source: Morgan Guaranty Trust Co., Reuters.

EBEL
The Architects of Time

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The flavour of an island in a single malt.

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-1911-
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15, rue Royale
Paris

Close Ra...
Pilots of D...
Joked Ab...

AMERICAN TOPICS

California Plans to Try British Roundabouts

The California highway department plans to experiment with British-style road intersections, called roundabouts, in an effort to reduce both accidents and traffic jams, the Los Angeles Times reports.

After authorities learned that a federal prison inmate in Tallahassee, Florida, planned to escape by helicopter, they had their own helicopter hover low over the prison yard.

USAir finally got its designator code in the Official Airline Guide changed from "AL," which was short for its old name of Allegheny Airlines, to "US," but it took a lot of bureaucratic wrangling.

Opponents say roundabouts are unfamiliar and intimidating. But British studies credit roundabouts, which minimize the chances of head-on and broadside collisions, with reducing accidents by 40 to 60 percent and fatalities by as much as 85 percent.

Short Takes

Under the 1986 amendments to the Paperwork Reduction Act of 1980, all U.S. federal forms must contain an estimate of "burden hours" required to complete them.

The Internal Revenue Service has finally conceded what taxpayers already know: You can't compute your income taxes in two and three-quarter hours, the agency's official estimate two years ago.

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Three female Andean condors released in the wild in California this month in a rehearsal for the planned release of California condors are now feeding normally on dead rodents offered by their hidden human caretakers.



CALIFORNIA CHORES — President Ronald Reagan watered a new redwood tree, a gift from the White House press corps, at his Santa Barbara ranch as Nancy Reagan watched.

man for the Los Angeles Zoo announced. The condors will remain in the cave until they are coaxed into flying and begin to seek their own food, probably in December.

Notes About People

Chief Justice William H. Rehnquist has criticized the U.S. Senate's confirmation process, saying senators expect judgeship nominees to give instant answers to complex constitutional questions.

Rivals in Angola Reinforcing Troops

By David B. Ottaway Washington Post Service

WASHINGTON — Cuba and South Africa are continuing to reinforce their opposing armies along the border between South-West Africa and Angola, with more than 50,000 Cuban troops now stationed in Angola, U.S. officials say.

While revising upward by at least several thousand the U.S. estimate of Cuban troop strength in Angola, the officials denied reports on Friday that Cuba is now sending more soldiers. But they confirmed the continuing arrival of new Soviet war materiel from Cuba.

A State Department spokeswoman, Phyllis E. Oakley, called on both nations to choose the "road of peace" and urged a quick agreement at the next round of U.S.-mediated negotiations.

The talks were suspended Aug. 26 to allow South African, Cuban and Angolan negotiators to consult with their governments about a possible compromise over a timetable for Cuban troop withdrawal.

Tito Chingunji, a representative

Advertisement for CACHÉ security products, featuring a star logo and text: "DON'T LET A THIEF RUIN YOUR DAY! STOP PICKPOCKETS CACHÉ For him & her"

Advertisement for raoul & curly perfumes and cosmetics, featuring a perfume bottle and text: "PERFUMES COSMETICS LEATHER GOODS LIGHTERS PENS GIFTS"

Ferit Melen Dies; Former Leader in Turkey Was 82

The Associated Press

ANKARA — Ferit Melen, 82, a former prime minister of Turkey, died of heart trouble Saturday.

Mr. Melen was finance minister from 1962 to 1965 and prime minister in 1972 and 1973. He was defense minister in 1971 and from 1975 to 1977.

He became prime minister after the army, which toppled the conservative government of Süleiman Demirel in 1971 in reaction to extremist kidnappings, killings and bank robberies, installed a "controlled democracy" to run Turkey.

Other deaths:

Harold S. Mohler, 69, former chief executive of Hershey Foods Corp., Wednesday of cardiac arrest in Hershey, Pennsylvania.

Close Race Is Seen in Pivotal U.S. States

By E.J. Dionne Jr. New York Times Service

WASHINGTON — Vice President George Bush and Governor Michael S. Dukakis of Massachusetts enter the decisive stage of the 1988 campaign with Mr. Bush seeking to maintain the offensive and Mr. Dukakis struggling to regain what was once a formidable lead in the race for the presidency.



George Bush and his wife, Barbara, took a moment to play with their dog after a campaign barbecue at their home in Washington.

On Monday, the traditional Labor Day starting mark of presidential campaigns, the two men "will find themselves in one of the most fluid contests in recent memory, essentially even in the polls and in the eyes of both campaigns."

A new round of surveys, released Saturday, showed the contest very close in several large states, notably California, the most populous state and where 47 electoral votes are at stake.

Andrew Kohut, president of the Gallup Organization, said, "If you look at all the evidence, you come to the conclusion that the race is dead even."

In a contest that has seen enormous shifts in the polls over very short periods, it is Mr. Bush who has dominated for most of the last three weeks.

The Republican nominee has used the last month to close a 17-point deficit in the polls, despite the unfavorable reception given his vice-presidential running mate, Senator Dan Quayle of Indiana.

At a press conference Saturday, the vice president stressed such issues as the growth in jobs during the Reagan administration and emphasized that in some areas he

would improve on the performance of President Ronald Reagan.

But Mr. Dukakis highlighted one of the central themes of his candidacy with a visit to Ellis Island on Saturday, where he stressed the challenge of opportunity for all.

"We must never forget," he said, "though some would have us do so, that today the rich are getting richer, the poor are getting poorer, and those in the middle must work twice as hard just to stay in place."

He sounded that theme after a week of moving on several fronts to

strengthen his campaign. These moves were seen as a signal that Mr. Dukakis, who is usually wary of sharp changes in approach, had come to agree with critics in his own party who saw his campaign as stalled and insufficiently aggressive in its response to Mr. Bush.

The latest major poll on the campaign, a survey of roughly 300 registered voters in each of five key states conducted by Peter D. Hart Research Associates, showed Mr. Bush and Mr. Dukakis in a close contest for California.

The survey, published Sunday, showed Mr. Bush with a large lead in Florida and a substantial lead in Texas. Mr. Dukakis led in New York and Illinois.

Following is a region-by-region rundown of how the election is shaping up:

So does Pennsylvania, but less so. Republicans see New Jersey as Mr. Bush's best bet in the region.

Deep South. Mr. Bush could sweep it all, though oil problems help Mr. Dukakis in Louisiana. Georgia is probably the second best bet for Mr. Dukakis.

Southern and Border States. Democrats are strong in Maryland, West Virginia and Arkansas; the Republicans are strong in Virginia. Big battles are expected for Tennessee, North Carolina and Missouri. Oklahoma should be Republican, but the oil downturn and having Senator Lloyd Bentsen of Texas on the Democratic ticket could help Mr. Dukakis.

Texas and Florida. Florida seems safe for Mr. Bush. The fight is for Texas, and for the state's conservative Democrats. Mr. Dukakis, who speaks Spanish, has Hispanic voters, Mr. Bentsen and the oil economy in his favor.

Illinois, Ohio, Michigan. All are very close. Ohio seems Mr. Dukakis's best bet. In Illinois, the Democrats could suffer from racial polarization in Chicago. Michigan leans toward Mr. Dukakis, but could easily tilt the other way.

Middle West. A split. The region includes some of Mr. Bush's strongest states: Indiana, Nebraska and Kansas. It also includes some of Mr. Dukakis's best bets: Iowa and Minnesota. Wisconsin leans Democratic. North and South Dakota, usually Republican, could vote either way.

The Rockies. Solid for Mr. Bush are Utah, Idaho, Arizona, Wyoming and probably Nevada. Dukakis targets Colorado, Montana and New Mexico.

California. Perhaps the pivotal state. Part of the fight here is a battle of voter turnout, which pits Democrats in the San Francisco Bay area in the North against Republicans in Orange County in the South.

Pacific Northwest. Oregon looks good for Mr. Dukakis, and Washington and Hawaii lean his way. Alaska likely for Mr. Bush.

Pilots of Delta Jetliner Joked About Crashing

Washington Post Service

DALLAS — The pilots of the Delta Air Lines plane that crashed on takeoff here Wednesday talked about presidential politics, chatted with a flight attendant and joked sarcastically about crashing, according to a source who listened to the cockpit voice recorder.

Recalling the controversy over indicative remarks about a flight attendant made by pilots in a crash last November and published in The Denver Post for the first time last week, the two Delta pilots and the flight engineer said they should say something about flight attendants so the news media would have something to write about when they crashed, according to the source.

The pilots' conversation on the tape, aside from its colorful nature, is considered an important factor in the accident by investigators only if they conclude that it distracted the pilots from their duties.

Federal air regulations require pilots to speak only about flight operations from the time they push back from the gate until they are 40,000 feet (3,000 meters) high.

No flight attendants are allowed in the cockpit unless they are briefing the pilots on matters concerning the flight. The rules, however, are subject to some interpretation, particularly if a jet is forced to sit on the tarmac for 20 or 30 minutes, as the Delta jet did, waiting to take off.

of freedom" to converse as long as they properly conducted the operation of the flight.

"As long as the business of maintaining the flight is conducted," Mr. Berry said, "you don't totally prevent anybody from looking at another one and saying something. You have to remember these people were in a queue for more than 20 minutes."

Advertisement for Igedo Dusseldorf fashion collection, featuring a model in a dress and text: "the selection of fashion igedo dusseldorf september 11-14, 1988"

In Lucerne, your preferred choice is the Grand Hotel National

Very intimate, very private and very personal, with its charming suites, garden terraces and breathtaking views of Lake Lucerne and the Swiss Alps.

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Large advertisement for Matra Espace featuring a stylized graphic of a person in a space suit and text: "In Matra we trust. THE ARIANE EQUIPMENT BAY. After 21 successful flights, Ariane's equipment bay continues to perform with flying colors."

U.S. Spy Satellite Stuck in Wrong Orbit

New York Times Service
NEW YORK — A U.S. spy satellite launched last week is reported to be stuck circling the Earth in a flawed orbit, forcing the military to continue to rely on old systems to learn of an impending Soviet attack and to monitor Soviet communications.

The satellite was placed in a successful preliminary orbit. But a source close to the project, who spoke on condition of anonymity, said the satellite had not achieved the desired orbit, 22,300 miles (33,600 kilometers) up, when the

Titan rocket's upper stage failed to reignite.

The satellite reportedly remained in a sharply elliptical orbit, ranging from about 100 to 22,300 miles above Earth.

He also stated that there was little hope of saving the mission.

Captain Ken Warren, a spokesman for Patrick Air Force Base, in Florida, said on Saturday that a Titan 34D rocket on Friday had "successfully launched" a secret military payload into space. But he added that the Air Force, as a rule, made no comment on the perfor-

mance of classified cargoes in orbit.

Jeffrey T. Richardson, the Washington-based author of "The U.S. Intelligence Community" and a private expert on spy satellites, said: "If they can't recover most of its capability, you could have a serious loss of coverage if other satellites already up there reach the end of their lifetimes or otherwise begin to fail."

"It is certainly something that will be used by opponents of East-West treaties on the grounds that they can't be verified."

Private experts believe the satellite is a type named Vortex. These

spacecraft unfurl a giant antenna in orbit to monitor Soviet missile tests, radio, telephone, radar, and other electronic military and diplomatic communications.

Such electronic intercept satellites are believed to cost \$300 million to \$500 million.

To function correctly, a Vortex-type surveillance satellite should be in a circular orbit 22,300 miles above the Earth. Such an orbit would keep it circling the Earth in step with the Earth's rotation, and thus keep it above the same point on the ground.

KURDS: A Sense of Loss

(Continued from Page 1)

made extensive use of internationally outlawed chemical weapons during its war with Iran, according to a recent United Nations report. Kurdish spokesmen in Europe have claimed it is being used in the troubled north of Iraq.

A Turkish official who interviewed many refugees said they had told him of aircraft dropping blue-painted canisters that spread a gas smelling of apples or pears. Then they felt a constriction of the throat and a stinging in the eyes. Some fugitives, the official said, had made it here, then died after reaching sanctuary.

Others had more confused, second-hand accounts of chemical weapons being used against neighboring villages. "The only thing we fear," said Salim Hamid, 50, who was clad in the khaki uniform of the Pesh Merga, "is poison gas."

Rumor of the use of chemical weapons was sufficient to send many Kurds fleeing.

"The people here were the population who lived close to the border," said a French physician, Bernard Benedetti, surveying the 20,000 Kurds, including hundreds of unarmed guerrillas, spread in the Kadisbeh Valley above this border village. "When they heard there was an offensive, they fled."

Dr. Benedetti, from the Paris-based organization Doctors of the World, and a Turkish paramedic, Mehmet Selim Tunc, said they had



Kurds waiting to be checked by police commandos near the border in Turkey after fleeing from Iraq.

found no trace of injuries inflicted by chemical warfare among the refugees here.

But that, the doctor said, was not an immediate concern. High above the Kadisbeh camp, along a ridge line, Iraqi soldiers could be seen patrolling the frontier. On Sunday, an Iraqi Air Force helicopter briefly crossed the frontier.

Turkey has given the Kurds temporary sanctuary, but Iraq has now sent its forces to seal the frontier from its side, Dr. Benedetti said, citing information from Turkish military officers.

"There are people there who want to flee and cannot," he said. "Travelers here reported that Iraqi forces crossed into Turkey briefly and fired on fugitive groups Saturday, killing at least one."

Turkey has provided food, but few medical supplies have arrived to combat diarrhea among the children.

"We do not have enough medicine," said the Turkish paramedic, Mr. Tunc, "and there are so many people needing medicine."

Iran Involved, Iraq Says

Paul Lewis of The New York Times reported earlier from Geneva: Foreign Minister Tariq Aziz of Iraq says Iran had encouraged a Kurdish uprising in northern Iraq and provided the rebels with arms and other supplies as part of its "military effort" against Iraq during the Gulf war.

Mr. Aziz said in an interview on Saturday that as soon as Iran accepted the Gulf War cease-fire with

Iraq last month, the Kurdish dissident leaders realized their rebellion was doomed and decided to flee with as many supporters as they could muster into neighboring Turkey and Iran.

Mr. Aziz accused the two principal Kurdish rebel leaders, Mansour Barzani and Jalal Talabani, of seeking "to create publicity" for themselves by encouraging women and children to flee into Turkey.

Ordinary Iraqi Kurds who left the country in this manner are free to return "any time they want," the foreign minister said.

But he called Mr. Barzani and Mr. Talabani "traitors" who had collaborated with the enemy during the Gulf War, and said "they should be hanged."

KOREA: Seoul Shifts Into Overdrive as Run-Up to the Olympics Begins

(Continued from Page 1)

confident, to accept the old ways. Hyundai and Daewoo build and sell red cars; Seoul's restless tycoons trade with Communist China and eagerly eye the coal in North Korea. Just as Seoul residents put handkerchiefs to their mouths and carry on with their lives when tear gas drifts from the campuses, so the city itself rises around and beyond the tank traps and riot police.

For centuries, Koreans proudly say, they paid tribute to the emperor of China without sacrificing their independence. Today, Seoul

digests imports from Japan and the United States, always stamping them as its own.

Koreans eat Japanese-style sashimi, or raw fish, not with a delicate Japanese-style hint of horseradish and soy — which the Koreans think is pale and flavorless — but with fiery red chili paste and hunk of raw garlic, which to Japanese is unseparably crude.

The street stalls of Seoul's teeming marketplaces have not yielded to the gleaming department stores of the middle-class neighborhoods south of the river. Doing business late into the night under a single

naked light bulb, they still offer tofu and dumplings, grain alcohol and cane liquor, pig heads and noodles and even, like the Chinese, dog meat.

But in a nod to the modern era, some provide Samsung television sets perched on stands above the stalls. Others sell Spam and M&Ms, which somehow find their way from U.S. Army PXs to the narrow market lanes.

Pastor Paul Yonggi Cho is a resident of Seoul, born, like so many others in the capital, in a small village. Today he shepherds the largest congregation in the world, the Yoido Full Gospel Church.

He is not the kind of Korean minister whom foreigners often meet, the black-suited human rights activists who have led the fight for independence and democracy since early in this century. Like the brash, entrepreneurial founders of Hyundai and Daewoo and Samsung, Pastor Cho is an empire-builder, a man with big accomplishments and big plans.

In 1958, his first church, in a tent, attracted five followers. Today, his 530,000 church members are tracked by church computers and organized into neighborhoods, blocks and 60,000 "cells" of 10 or so worshippers each.

Pastor Cho says the rapid urbanization of the nation, from three-quarters rural in 1955 to about one-quarter rural today, encourages conversions. Traditionally Buddhist and Confucian, South Korea has more than 12 million Christians now, with fundamentalist churches attracting most of the converts in recent years. Red neon crosses of storefront churches glow from every Seoul hilltop at night.

Korean tenacity is everywhere in Seoul. It is in the high school girls who rent desks at commercial study halls because there is no room at home, and who study every night until after midnight. It is in the suave government bureaucrats with Berkeley and Georgetown doctorates who work late every night charting the nation's course.

It is in the dissident lawyer, jailed and disbarred for representing the politically unacceptable, who nonetheless speaks warmly of a prosecutor with whom he went to school, because in Seoul human relations and networks remain paramount.

And it is in the businessmen who, never fully accepted in this Confucian society that views the entrepreneurial spirit as something a little unclean, have nonetheless struggled to turn Seoul into a trading capital of the world.

TOMORROW: Overcoming Adversity

TUTU: Archbishop Urges a Boycott of Municipal Vote

(Continued from Page 1)

be surprised if the law is applied to them.

"While they can say what they want," Mr. van der Merwe said, "they resent it when anyone attacks them. I want to tell them now, they are not untouchable."

For months, Archbishop Tutu has been at the forefront of a growing confrontation between church and state over apartheid and new restrictions placed against 17 major anti-apartheid organizations and South Africa's largest black labor federation, the Congress of South African Trade Unions.

In his sermon on Sunday, marking the installation of the first mixed-race Anglican dean of Cape Town, Canon Colin Jones, Archbishop Tutu said white and black South Africans must show love and respect for one another or invite a continuation of "race madness."

"You cannot get security through the barrel of a gun," he said, "nor through the draconian and oppressive state of emergency, or through bomb blasts."

This was a reference to the bombing last week in Johannesburg of Khosou House, headquarters of the South African Council of Churches and other anti-apartheid groups.

Government officials have said the stakes in the municipal elections are high, involving the credibility of black township councils and the future of participatory politics among blacks.

Pretoria is counting heavily on the success of the elections to clear the way for planned regional elections of black representatives who would serve on a proposed National Council and negotiate constitutional reforms for power-sharing at the central government level.

Suzman Sees Mandela

John D. Battersby of The New York Times reported earlier from Johannesburg:

Helen Suzman, a promoter of South African civil rights advocate, said after a private meeting with Nelson Mandela that the imprisoned African National Congress leader would act as a moderating influence if he was freed.

"I am convinced he would be a key figure in any negotiating process and would act as a brake on extra-radical elements," said Mrs. Suzman, who has long been a member of the South African Parliament.

Mrs. Suzman, who has met Mr. Mandela on several occasions dur-

ing his quarter-century behind bars, was allowed for the first time to meet the black nationalist patriarch without a prison guard being present on Friday. Mr. Mandela is under guard in a private clinic in Cape Town, recovering from tuberculosis.

"We had a wide-ranging discussion about all sorts of things," Mrs. Suzman said. "I found him to be very well-informed on current events."

She added that she did not expect the government to put Mr. Mandela back in Pollsmoor Prison in the near future, but she predicted that he would be allowed a lengthy period of recuperation in the Constantiaberg clinic.

Dr. J. G. L. Strauss, medical superintendent of Tygerberg Hospital, where Mr. Mandela was treated, said Friday that the disease required a convalescence of "up to two to three months."

Man Held for Bush Threats

The Associated Press

SPRINGFIELD, Missouri — Police arrested a man who allegedly tried to carry a gun onto an airplane and made threats against Vice President George Bush, authorities said Saturday.

FOREST: Indonesians Worry That Their Timber Boom Might Backfire

(Continued from Page 1)

trees indiscriminately to make it easier to remove the relatively few valuable species from the jungle.

"In practice, it's difficult to tell the difference between selective cutting and clear felling," said Agus Purmono, executive director of the Indonesian Environmental Forum, a conservationist group.

He and other conservationists are concerned about the accelerating rate of deforestation in Indonesia and the failure of official regulations to control it.

Forests cover about 60 percent of Indonesia, with the heaviest growth in Kalimantan, Irian Jaya, which occupies the western half of New Guinea island, the Moluccas and Sumatra.

When the meranti and other commercially valuable trees are removed, cleared areas are used as land for settlement, partly to ease overcrowding on the central island of Java, where 100 million of Indonesia's 175 million people live.

To reach the cleared land, settlers and miners often follow tracks carved out by loggers.

About half the deforestation in

Indonesia each year is caused by farmers who cut and burn the jungle, the World Bank says.

Some of this settlement is uncontrolled, while some is organized by the government under a transmigratio program that has moved more than 3.5 million people from Java to sparsely populated outer islands since 1969.

All forests in Indonesia are state-owned, but substantial tracts are controlled by about 500 concession holders. Hira Jhamtani, information officer for the Indonesian Forestry Conservation Network, a nongovernment agency, said that the concession system had not been well managed.

Many of the concession holders, she said, are former high-ranking military officers and civilian officials who were given concessions as a reward for government service. "It's a kind of pension fund," she said.

Concession holders, she said, lack the expertise or the capital to carry out logging operations, so for a share of profits they sublease their tracts to local and foreign logging companies.

In the remote jungle locations,

"operating and reforestation regulations are rarely, if ever, checked," she said. "Various illegal operating conditions go unnoticed or are often ignored."

A study by the Food and Agriculture Organization, a United Nations agency, reported that logging companies found it cheaper to forfeit bond money they pay into a special account with the Ministry of Forestry than to plant and manage seedlings in difficult jungle terrain. The bond money is supposed to be used by the companies for reforestation.

Mr. Salim of the Population and Environment Ministry conceded that the enforcement of forestry rules was difficult in a country as big as Indonesia.

He said that if Western nations and Japan were genuinely concerned about the impact of tropical forest destruction on global weather patterns and temperature, they should agree to pay more for timber imports from the Third World so that countries like Indonesia could reduce the volume of production while maintaining its income.

The World Bank recently agreed

to lend \$34 million to Indonesia to finance improvements in forestry planning, management and conservation.

The government plans to conserve about one-third of the forest for water catchment and wildlife preservation, while gradually converting the remaining two-thirds to sustained-yield tree plantations, tree crop estates and agriculture.

How much forest remains of Indonesia's 191 million hectares of land is in dispute. The Ministry of Forestry says there are 144 million hectares of forest; the World Bank puts the figure to 114 million hectares.

The bank also said that the rate of logging in concession areas was believed to be substantially above officially reported levels. Miss Jhamtani said the concessions covered 53 million hectares.

About 60 percent of Indonesia's timber production is from Kalimantan, and most of the country's 300 sawmills and 100 plywood factories are here.

Because of rapid deforestation, officials have said in recent months that they wanted timber companies to shift operations to Irian Jaya.

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DER SPIEGEL

Trial of Brezhnev's Son-in-Law (and Maybe an Era) Set to Start Monday

By Felicity Barringer New York Times Service

MOSCOW — The defense lawyer insists that it will be a straightforward trial to determine whether nine men killed the Soviet government out of millions of rubles.

But many Muscovites find it hard to see Yuri M. Churbanov, the lead defendant in the case that opens Monday, as anything but an apt symbol and scapegoat for the now-discredited regime presided over by his father-in-law, Leonid I. Brezhnev.

It will be even harder to avoid the obvious connection if the former Soviet leader's daughter, Galina L. Brezhnev, appears as a defense witness, as the defense attorney, Andrei Makarov, promised in a television interview Friday.

Mr. Makarov said in an article in the weekly newspaper Moscow News, "Churbanov is indicted for bribe-taking and abuse of office, and if he is found guilty he is to be punished for his own misdeeds."

It would be a mistake, he said, "to try and judge Brezhnev under Churbanov's name."

But many in Moscow still remain skeptical about whether the government of Mikhail S. Gorbachev, the Soviet leader, can resist using the trial as an object lesson showing the corrosive effect of the policies and management of the 1970s and early 1980s, long since officially dubbed the "era of stagnation."

"They may not want it to be a trial of the era," a Muscovite said Sunday in discussing the trial, which will be held in an open courtroom. "But it will be."

Last week, an article in the Communist Party newspaper Pravda portrayed Mr. Churbanov as a man who fawned and faked his way to the top, a small-time whose rise to the number-two job in the Interior Ministry reflected the monetary and moral corruption of the world around him.

Describing Mr. Churbanov, 51, as "a man of mediocre talents, distinguished only by his outstanding opportunities and scope," Pravda added, "He had something else — power. And Churbanov didn't just use this for his own goals. He was a powerful, influential tool in the hands of people more clever than he."

But an article by a lawyer in the government newspaper Izvestia on Friday seemed to rebuke Pravda and other Soviet journalists for their attitude toward the trial.

Without mentioning the Churbanov case specifically, Izvestia's legal expert, Yuri Feofanov, wrote that "a sentence handed down before the trial by a journalist could easily influence the sentence handed down by the court."

"To go against a torrent of public passions," he said, "is not easy even for independent judges."

Reminding his readers of the show trials of the 1930s, public spectacles at which the accused often confessed to their supposed crimes, he said, "In discussing Stalinist lawlessness, we justly rebuke the press of those times which was influenced by fear. We reproach public opinion for the fact that honest people were branded criminals and enemies of the people 'a priori,' in the absence of any kind of evidence."

"The law must remain the law," Mr. Feofanov said. "Persons suspected of even the most severe crimes are not guilty until their guilt is established by a court."

The Pravda story had been preceded several months ago by televised interviews with prosecutors and investigators, programs that included filmed footage of the stacks of rubles that prosecutors said the conspirators earned while selling their patronage power and their influence.

To add piquancy to the case, most of the worst offenses are said to have taken place in Uzbekistan, the Central Asian republic and cotton-growing center of the Soviet Union whose reputation for organized lawlessness and violence rivals that of prohibition-era Chicago.

The Churbanov case, however, may provide some intriguing detail about the Brezhnev family and the headstrong and flamboyant Galina Brezhnev, in addition to revelations about her husband's business dealings.

Pun on 'Ovens' Lands Le Pen in Trouble

By Steven Greenhouse New York Times Service

PARIS — Jean-Marie Le Pen, the leader of the French far right, has been condemned by politicians and leaders of human rights and Jewish groups for a joke about World War II crematoriums.

Mr. Le Pen, leader of the National Front political party, made the joke, a play on words, during a speech on Friday.

In attacking Michel Durafour, a centrist politician who was named minister of public service by the socialist government, Mr. Le Pen called him "Mr. Durafour-crematoire."

In French the word "four" means oven, and "four crematoire" is the term used for the crematoriums used to burn the bodies of Jews during World War II.

Mr. Le Pen's remark follows a storm of criticism that he caused a year ago when he said that Nazi gas chambers were just a "minor point" or "detail" of history.

Alain Juppé, secretary-general of the Rally for the Republic, the main conservative party, responded to Mr. Le Pen's play on words by saying, "There are words one does not make jokes about."

Le Figaro, a conservative Paris newspaper, and Liberation, a leftist

daily, ran stories Saturday with identical headlines: "Le Pen commits a second offense."

As with last year's remark, Mr. Le Pen's statement about crematoriums was met with accusations that the rightist politician, whose party seeks to limit Arab and African immigration into France, was xenophobic and also anti-Semitic.

In the first round of the French presidential election, April 24, Mr. Le Pen received more than 14 percent of the vote.

Jean-Jack Queyranne, the Socialist Party spokesman, said, "Mr. Le Pen is showing what he is at

heart: a racist and an anti-Semite."

Henri Bulawko, vice president of the Council of Jewish Institutions in France and president of an organization of French Jews deported in World War II, said, "Le Pen is carried away by his fantasies and does not hesitate to insult the victims of Nazism."

SOS Racism, a Paris-based organization that fights prejudice, said, "Le Pen continues to fan the flames of anti-Semitism in our country."

Mr. Durafour said, "I can see that Mr. Le Pen misses the good old Nazi times and wishes to see them begin again."

Earlier this week, Mr. Durafour called on centrists to help defeat the National Front in municipal elections next year.

In his speech Friday, at a meeting of 700 supporters, Mr. Le Pen attacked Mr. Durafour for being ready to ally himself with Communists.

"Mr. Durafour-crematoire, thanks for this admission," Mr. Le Pen said.

Later, responding to the criticism over his remark, Mr. Le Pen said, "Everyone can judge for himself whether it was in good taste or not. It's not my problem."

He added, "Mr. Durafour is not just an imbecile, but a bum."

Priests Who Followed Rebel Bishop Are Returning to Fold, Vatican Says

By Roberto Suro New York Times Service

ROME — In the two months since Archbishop Marcel Lefebvre was excommunicated from the Roman Catholic Church, a steadily growing number of priests have defected from his ranks and have offered their loyalty to Pope John Paul II, Vatican officials say.

The largest defection thus far became known last week as Vatican officials acknowledged that they had reached an agreement with a group of 20 French monks that had abandoned the radically conservative archbishop but has been permitted to continue its traditionalist practices under Rome's auspices.

This compromise with the monks at the Benedictine abbey in France, signaled the Vatican's willingness to offer the archbishop's followers a certain latitude. Vatican officials said negotiations were under way with others, including about 30 priests and seminarians in Fribourg, Switzerland.

Archbishop Lefebvre, who is best known for his insistence on saying Mass in Latin, was excommunicated on June 30 after he consecrated four bishops against the pope's order. That act constituted the first major schism in the church in more than a century.

Although the archbishop has been in conflict with the Vatican over church doctrine and practices for more than 20 years, he was not punished for his views. Instead, he was expelled from the church for defying papal authority.

Except for the four bishops ordained in June, who were also excommunicated, the Vatican's punishment of Archbishop Lefebvre has not included his followers. A commission headed by Cardinal Paul Augustin Mayer, of West Germany, was created to bring the 250 or so priests who supported the archbishop back into the church.

"The commission has received many inquiries and arrangements have been made in a significant number of cases from around the world," the chief Vatican spokesman, Joaquin Navarro-Valls, said. "It is the sort of action we were awaiting," he said. "When you consider the relatively small number of priests that were loyal to the archbishop, then movement by groups of 10 or 20 or even four clerics gradually adds up to something substantial."

Many priests loyal to Archbishop Lefebvre have continued to preach a brand of Catholicism at variance with church teachings on several points. The archbishop, who has declared that the Vatican is filled with "antichrists," rejected many of the principles affirmed by the Second Vatican Council, which closed in 1965. Among those principles are the promotion of religious liberty (or all, the need to establish positive relations with other branches of Christianity, and the sharing of responsibility between the pope and bishops.

The agreement reached with the Benedictines of Barroux clearly indicates that the pope is not asking the archbishop's followers to change all their beliefs to rejoin the church. According to senior Vatican officials, the monks have not been required to renounce the archbishop, and they have been permitted to preserve their liturgy and dogma practices.

"The juridical ties between Archbishop Lefebvre and these priests was so loose," a senior Vatican official said, "that formal repudiation is not an issue. Instead, it is a matter of discussing certain attitudes and ascertaining their acceptance of basic matters."



Gaultier's sans-culotte stripes and brocaded vest (left) contrasted with Montana's soft, romantic lines in Paris men's fashion shows.

Codpiece Gets a Revival In Gaudier Show

By Suzy Menkes International Herald Tribune

PARIS — Now that the macho shoulder line has withered away, what is the new focus of men's fashion in the French spring/summer shows?

Jean-Paul Gaultier, one of the weekend's star designers, puts the emphasis where it hurts the male ego least. He cut out a codpiece shape from regular pants, or

coats and chestnut, and his models had changed from ranchy to romantic, with rosy cheeks and tendrils of curls.

The result was a very fine collection, almost entirely in linen with silk and viscose. Pants were wide and soft — a line that worked better with the short mess jackets than the long fitted ones. Montana's favorite black leather (which the designer wore himself to receive the ovation) was replaced on the runway this season with inky blue suedes delicately worked with topstitching and braiding.

The shirt was the star at Comme des Garçons, where Rei Kawakubo has a new lower-price line called Shirt, along with her Homme Plus. An over-shirt with weak points was worn under the jacket, or a vest front came with just suspenders crossing at the back to show off more of the shirt. Pyjama stripes (or was it that Revolution again?) were used for pants and jackets. These seemed at first regular in cut, but had an extra fashion twist — contrast fabrics for the sleeves or a one-button ock fastening. The collection, from this season's designer, had a light and contemporary touch that makes the clothes collectors' items for the fashion aware.

PARIS FASHION

Dressed his models in cowboy chaps — overtrousers cut away at the inside leg. This left a fig leaf of boxer shorts, jockey underpants or tautly stretched swim shorts.

Just in case we hadn't got the message of man as sex object, Gaultier also showed urban Tex-men in animal-print jeans or baggy denims and "butcher's" aprons. For the beach he had brief swimsuits in shiny black vinyl or romper suits with starfish motifs on the buttocks. His long line of tuxedos included a hotrod, worn over silky pants, that made it easy to tell the boys from the girls.

Gaultier also hovered around another erogenous zone: the chest. The cowboy vest was worn over a naked torso or cut backless to show rippling muscles. Tight T-shirts also went for the pectorals.

With a sideways swipe at French Revolution fever, Gaultier also offered the striped pants of the sans-culottes (with cut-out codpieces and spotted undershorts) and vests in 18th-century brocades, which were stunning.

As always, this show was the best entertainment in town, with the far-out U.S. designer Stephen Sprouse as a runway model, groups running wild and some sleek suits and inventive sportswear under the cowboy fringes and brocade.

Claude Montana went for the waist. The sound of his shoulder pads dropping out of sight could be heard from the Arc de Triomphe to the Eiffel Tower. Montana, founding father of the coat-banger silhouette, has gone soft.

Shoulders sloped gently away on jackets that were cropped short or pinned to the figure with panel seaming. Montana used a subtle palette of stone, bois de rose, terra

Cerruti's collection was best when it dealt in the quiet tailoring for which the designer is known, jackets shadowing the body closely, but never gripping it. Suits sometimes came with a vest, always with wide pants, and the collection was a lesson in fabrics, using a lot of silk mixed in with linen. Colors were drawn from a Tuscan landscape — the pale blue of rain-washed sky, dusty terra-cotta pink, baked earth beige and the silver of olive groves.

Thierry Mugler drew clothes to the body line, but that is nothing new for this designer, who produced his familiar inverted triangle silhouette — out at the shoulders, in at the waist, with dagger-sharp seaming and narrow pants. Most of the jackets were collarless; most of the colors day-glo bright. Peacock electric blue, acid yellow, emerald green and shocking pink (sometimes two mixed together in one outfit) left a sour taste. The effeminate Mugler, wearing his own favorite sky blue, looked best.

27 Die in Nigeria Bus Craah

LAGOS — Twenty-seven persons were killed Friday when a bus collided with a truck in the northern state of Niger, the newspaper Concord reported Saturday.

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OPINION

INTERNATIONAL **Herald Tribune**

The Poles Have No Choice

It is not the clear triumph of Aug. 31, 1980, when Lech Walesa announced that Poland's Communist government had recognized an independent trade union.

economic crisis. Younger, more radical workers regard such pragmatism as insufficiently militant — but they are in no position to hold out alone.

Sweden's Painful Mystery

Swedish politics, usually cool and serene, is gripped this year by the aftermath of a murder. On Feb. 28, 1986, Prime Minister Olof Palme was shot dead on a street in Stockholm.

trying to cut off the flow of arms to the Iranians. Mr. Carlsson did not get far before his activities became public.

Jackson Is Still Waiting

The Reverend Jesse Jackson said in Atlanta that he wanted no big job in the Democratic campaign and no title. What he wanted was respect — to be accepted as a man with useful advice and as a politician capable of delivering a constituency.

residual hostility among many Jewish voters. Mr. Jackson did well in Michigan's caucuses. But the caucuses were dominated by his black supporters and may thus have exaggerated his statewide popularity.

Other Comment

Shamir's 'Old West' Approach
Prime Minister Yitzhak Shamir of Israel has taken yet another dangerous step toward outright civil war by proposing that not only Israeli soldiers but civilians be allowed to shoot Palestinians who throw rocks.

A Limited Rapprochement
China and the Soviet Union are not about to become bosom friends. But they are doing what they can to improve ties and reduce tension.

Poland: A New Cycle of Broken Promises?

By Flora Lewis

PARIS — There is neither euphoria nor despair in the Polish regime's new agreement to negotiate with its people, whom the government has openly come to call "the opposition."

question is not whether Moscow will send troops any day, but whether disorder in Poland would provoke his ouster and a freeze on all reform.



By SAS in Theloyennes (Adrian). CAW Syndicate.

On the Outbreak of Peace and the Limits of Force

By Stanley Hoffmann

CAMBRIDGE, Massachusetts — Wars that have raged for years are ending. The Reagan administration has been quick to argue that this results from its policy of strength.

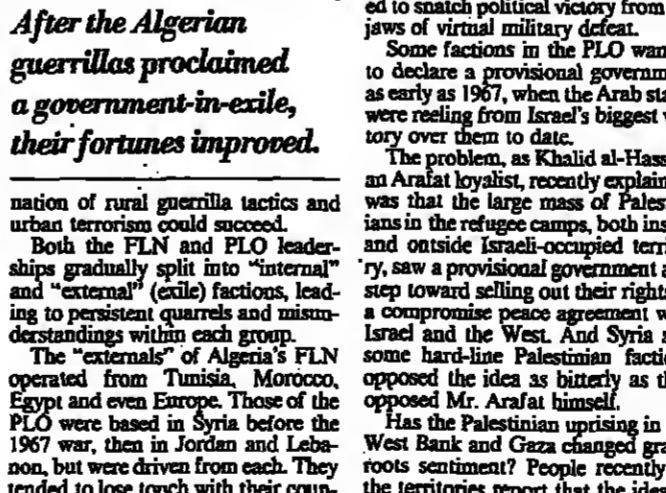
draw its forces from Afghanistan without asking Moscow to solve the problem of a new government, as the Pakistanis demanded.

The Palestinians Look Again to the Algerian Example

By John K. Cooley

LONDON — After decades of hesitation, will the Palestine Liberation Organization finally take the plunge and decide in Algeria this fall to form a provisional Palestinian government-in-exile?

Now that the Iran-Iraq war is at least suspended, Baghdad is likely to activate its deadly rivalry with Damascus. This may lead to a struggle for control of the P.L.O., with each country offering a political-military base for the movement, but neither offering it real freedom of action.



The writer is chairman of Harvard University's Center for European Studies. He contributed this comment to The New York Times.

100, 75 AND 50 YEARS AGO

1888: Papal Diplomacy
PARIS — A despatch from Rome states that the Concordat between the Czar and the Pope is now preparing.

For Dukakis, South Looks Inhospitable

By David S. Broder

JACKSON, Mississippi — When John F. Kennedy campaigned in the South in 1960, he had a favorite line. Citing the names of the senators and representatives from whatever state he was visiting, he would ask, "Why would you send good Democrats like these to Congress and turn around and vote for a Republican like Dick Nixon for president?"

It is no coincidence that the Republicans came on strong just as the national Democratic Party under Lyndon Johnson became the political arm of the civil-rights movement, which enfranchised millions of blacks and helped end rigid segregation in American society.

1938: Czechoslovak Crisis
NUREMBERG — From Berchtesgaden, his retreat in the Bavarian Alps, Chancellor Hitler will come down to medieval Nuremberg, where the atmosphere will be charged with the fervor of nearly one million of his followers.

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IN THIS RE...
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Air Sales
Crew Train...
Landing Air...

Aerospace: Commercial Imperatives

COUNTDOWN For the Shuttle

Aug. 3, 1987

Engineers for the National Aeronautics and Space Administration switch on the power of the space shuttle Discovery at Cape Canaveral, Florida, for the first time in more than a year, starting the long process of preparing the ship for a flight scheduled for June 2, 1988.

Aug. 27, 1987

The first full-scale test-firing of the shuttle booster rocket in Utah is aborted less than 20 seconds before it was to begin due to a failure in the cooling system.

Aug. 30, 1987

The first redesigned shuttle booster rocket is successfully tested in Utah.

Dec. 23, 1987

The failure of two critical components during the second full-scale test-firing of the redesigned booster rocket forces the delay of the first post-Challenger shuttle flight until at least August.

June 16, 1988

The fourth test-firing of the redesigned rocket is conducted successfully in Utah.

July 4, 1988

Discovery is moved to the launch pad at Cape Canaveral for attachment to the booster rocket and advanced testing.

Aug. 4, 1988

NASA aborts a crucial test-firing of Discovery's engines a fraction of a second before ignition when computers reported a valve problem. The delay threatened to push back further the launch, now planned for late September.

Aug. 10, 1988

Discovery successfully fires its three engines in a 22-second launching pad test — its toughest preflight check before launch.

Aug. 18, 1988

The fifth preflight test-firing of the redesigned solid-fuel booster rocket, riddled with 14 intentional flaws to challenge new safety features, appeared to go without incident at the Utah test facility of Morton Thiokol. NASA expressed hope that Discovery could be launched during the last week of September.



The space shuttle Discovery.

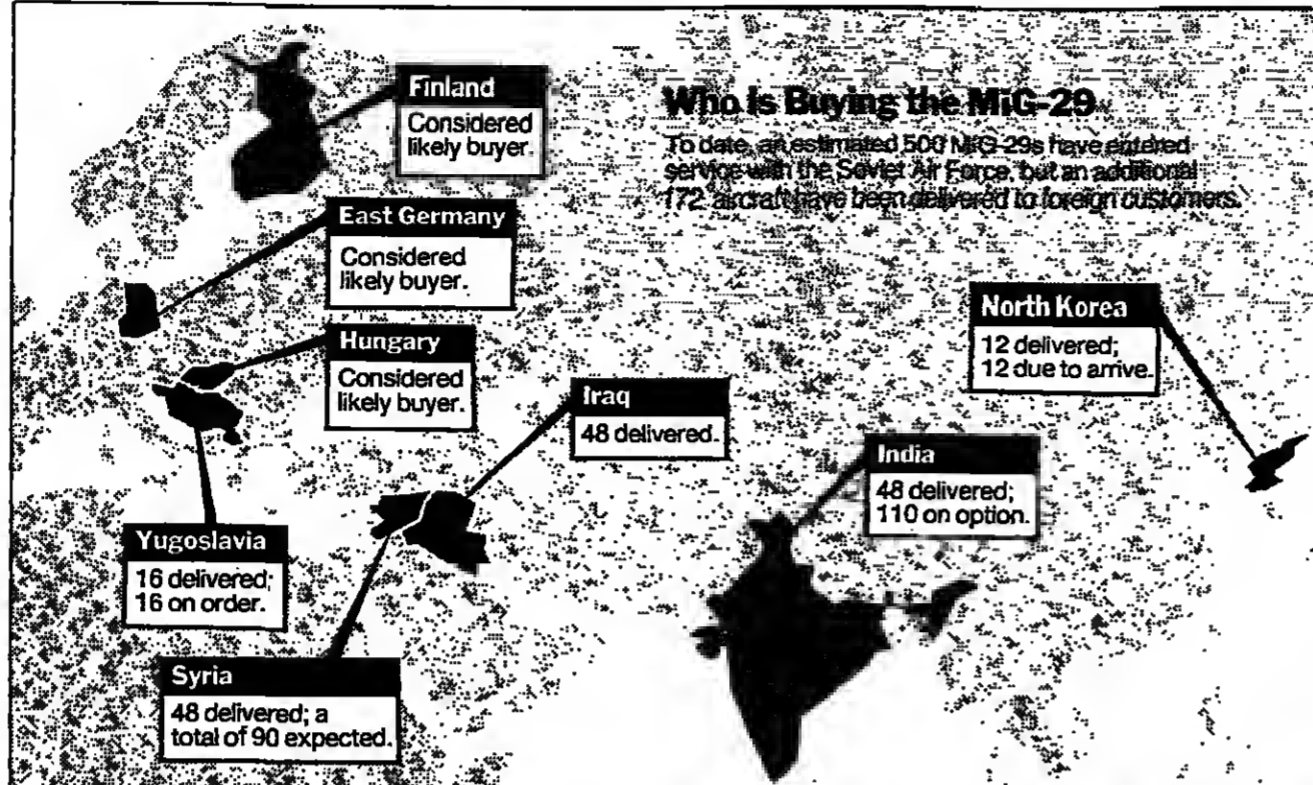
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The debate in West Germany over the merger of Daimler-Benz with MBB raises the issue of Airbus subsidies.

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Soviets Push MiG-29 Marketing

By Kenneth R. Timmerman

WESTERN intelligence agencies, aerospace executives, and aircraft buffs began lining up on Sunday at the air show in Farnborough, England, to catch a glimpse of the Soviet Union's newest showpiece, the MiG-29 air superiority fighter. The Soviets hope the display will help them win lucrative export contracts in the Third World and with their own allies.

It will be the first time they have used an international air show to sell their wares.

With the MiG-29, the Soviets have launched an aggressive new marketing policy that may herald unforeseen changes in Soviet foreign policy in coming years.

According to U.S. Defense Department studies, the first MiG-29 Fulcrums, as they are designated by NATO, entered service with the Soviet Air Force in late 1984. But already in March of that year, then Defense Minister Dimitri F. Ustinov formally offered to sell the aircraft to India during an official visit to New Delhi.

Even more unusual, when the Indians turned down the Soviet offer to purchase a half dozen Fulcrums in a downgraded "export" version, the Soviet generals came back with a better offer: 48 planes with the full avionics package, and a license to locally assemble an additional 110 planes for India's own needs and for export.

To sweeten the deal even further, the Soviets reportedly sold the planes at the rock-bottom price of \$11 million each — less than half of what the Fulcrum is fetching elsewhere, according to most Western observers. A comparable U.S. aircraft, the F-18 Hornet, is currently selling for about \$27 million.

For most aerospace observers, the rush to market the new plane was unprecedented. In the past, the Soviets have waited as long as five years after a new fighter was operational in their own forces before showing it abroad, and thus, exposing it to U.S. intelligence.

With their first international sale under their belts, the Soviets then flew the MiG-29 to Kuopio-Rissala Air Base in Finland in July 1986 for a series of demonstration flights. Two years later, the Finns notified the U.S. government that they were formally dropping the

General Dynamics F-16 from their short list. The Finns are now expected to buy the MiG.

To date, about 500 MiG-29s have entered service with the Soviet Air Force, while an additional 172 aircraft have been delivered to foreign customers. The latest customer was North Korea, which received 12 of the new fighters over the summer and is expected to receive at least another 12 in the coming months.

It joined India (48 delivered, 110 on option), Iraq (48 delivered), Syria (48 delivered, a total of between 90 and 150 expected), and Yugoslavia (16 delivered in early 1988, another 16 on order).

According to Aaron Karp, arms trade specialist of the Stockholm International Peace Research Institute, Hungary, Finland and East Germany could be next.

"This is the first time the Soviets have actually gotten involved in a sales campaign for a new military aircraft," Mr. Karp said. "Always before they either gave them away or sold them at discretionary prices."

Continued on page III

Business Stakes High At World Air Shows

New Focus on Safety

LONDON — More than 300,000 visitors are expected at the eight-day Farnborough International Air Show that opened Sunday. The biannual event, which is held in alternate years to the Paris Air Show at Le Bourget, is, like its French counterpart, a magnet for the world's aerospace industry.

Both events have long histories. Farnborough began 40 years ago when its organizers, the Society of British Aerospace Companies (SBAC), held the first show at Britain's Royal Aircraft Establishment airfield, 40 miles (64 kilometers) southwest of London.

Crowds of enthusiasts will, as they did in 1948, turn out for the traditional flying displays. A principal attraction this year will be the appearance for the first time at any Western show of two Soviet MiG-29 Fulcrum fighter aircraft.

However, with memories of the Ramstein disaster still fresh, there is likely to be a greater focus on safety factors than ever before.

Britain's Civil Aviation Authority, which is due to take over responsibility for all air displays in Britain, including Farnborough, in January, considers the overall record of safety in Britain to be "very good" in view of the big increases in air displays in the last decade. These increased in Britain from 100 in 1973 to 763 in 1986. Since 1976, there have been 43 accidents and 29 persons killed at different displays.

At Farnborough stringent safeguards already apply. Every pilot taking part has to arrive before the show to be briefed and to explain to technical committees what he intends to do and demonstrate routines that may be modified or disallowed.

In spite of their professionalism neither Farnborough nor Le Bourget have been immune from incident. The worst tragedy at Farnborough occurred in 1952 when 29 persons were killed by debris from an experimental jet that exploded. In 1973, the Soviet Union's TU-144 supersonic airliner crashed at the Paris Air Show, killing 13 persons, 6 on the plane and 7 on the ground.

Organizers in both Britain and France will be well aware that further adverse publicity concerning air shows could seriously damage the prospects of either event.

Farnborough, however, will have other interests for the estimated 50,000 business visitors who are expected to attend, for it is in many ways a giant marketing exercise. Similar to the great medieval fairs of old, the vast tented encampments of both Farnborough and Le Bourget provide an opportunity for participants to show off products and expertise and joust for business.

Both shows involve multimillion-dollar efforts aimed at securing business contracts. New business is expected to generate more than \$250 billion of civil aircraft orders in the 1990s. Military attention at the show is likely to be concentrated on Third World air forces, particularly those in the Middle East and Far East, whose business is essential in keeping production lines active.

SBAC's costs in putting on Farnborough total about \$17 million. Exhibitors are charged

for their floor and stand space and hospitality chalets. To this companies must add the costs of transporting equipment, aircraft, staff and their accommodation.

British Aerospace expects its bill for the eight days at Farnborough to be around \$2.5 million even taking account of economies imposed since the last show in 1986.

The non-airframe manufacturers are also big spenders in the British electronics company Plessey, for example, expecting its show costs to approach \$1 million.

The exhibition budgets for many companies have been severely stretched, not just by the increased costs of attending the major shows, but also by the rapid increase in recent years of other regional aviation and defense exhibitions.

Every pilot has to arrive before the show to be briefed and to explain what he intends to do.

Many are now questioning how much further they can stretch their resources to accommodate what appears to be a never-ending carousel of shows.

Aerospace's vice president for international affairs, Gerard Hinton, has been quoted as saying: "The problem is that putting on air shows and technical exhibits has become a business in itself and this business has taken on a logic of its own that is independent of the industry it is supposed to serve."

After the rigors of Farnborough, there will be little time for participants to recover and to begin planning for the Paris Air Show, which is to be held in June 1989, and for Asian Aerospace in Singapore, which will be held six months afterward in January 1990.

Meanwhile, many other shows, particularly in the defense sector, vie for the presence of international companies seeking or doing business in the regional markets served by a particular show.

SBAC has advocated that a triennial approach be adopted for the major events with Farnborough and the Paris Air Show being held on a three-year cycle with Asian Aerospace, which is now accepted as the premier event in the Far East. However, the organizers of Le Bourget, the Groupement des Industries Francaises Aeronautiques & Spatiales, refuse to accept this. They have seen the 12-day Paris

Continued on page VI

Europe Moves Ahead To Develop Fighters

\$40 Billion Market

By Robert Bailey

LONDON — Despite increasing domestic pressures to achieve economies in defense spending, four European nations — Britain, Italy, West Germany and France — are embarking on two ambitious military aerospace programs that far outpace their previous ventures in terms of complexity and commercial risk.

The go-ahead given by the defense ministers of Britain, Italy and West Germany in May for the development of the European Fighter Aircraft (EFA) followed France's own authorization, one month earlier, for prototype production of its planned new advanced fighter aircraft, the Rafale.

The political fears about the cost risks inherent in the programs have been heightened by the strenuous efforts made by U.S. manufacturers to promote their own planned product developments against the European programs.

Beyond the lobbying lies a potential \$40 billion market for new combat aircraft in Europe during the 1990s.

The long-delayed EFA agreement, known as a memorandum of understanding, still awaits the signature of Spain, one of the declared participants in the program, to build 800 fighter aircraft. However, Madrid has also been considering an invitation to join the Rafale program from its producer Avions Marcel Dassault-Breguet Aviation.

However, one immediate effect of the signing of the memorandum of understanding by its three main members has been a stifling of the concerted efforts made by the U.S. aerospace industry to persuade potential EFA members to opt for collaboration in developing McDonnell Douglas's planned Hornet 2000 fighter, a follow-on to the manufacturer's F-18 combat aircraft.

The U.S. undersecretary of defense, Dennis Kloke, led efforts earlier this year to promote the planned program in which European partners were offered a 60 percent share in the development of the new fighter aimed at markets in the United States, Europe and elsewhere.

The principal argument was that the collaboration would result in an aircraft one-third the cost of the EFA and one-half that of the Rafale.

Countering this, European manufacturers declared that to accept participation in the program would mean an eventual end to Europe's own capability in design and production of advanced combat aircraft. Suspicion of U.S. motives was voiced in many quarters.

McDonnell Douglas's offer of its F-18 as an interim aircraft to the French Navy before the naval version of the Rafale entered service was described by Serge Dassault, head of the Dassault Aviation firm, as an attempt to get a "foot in the door" to halt the Rafale program by diverting funds from the latter's development program.

Gerrie Willox, managing director of the Eurofighter (EFA) consortium, was equally concerned about the U.S. assault on the rationale of the EFA program.

Just weeks before the signing of the memorandum of understanding, at a time of intense West German debate on the cost of the EFA development, he was quoted as saying: "Until a decision is made, they will try everything to disrupt the process. To fully exploit all the new technologies, you need a new airframe which rules out the Hornet 2000 and Agile Falcon."

The Agile Falcon is promoted by General Dynamics as the successor to its F-16 fighter. The Netherlands, Norway, Belgium and Denmark, which have all participated in an earlier co-production program to equip their air forces with F-16s, have been invited by the U.S. government to participate in a two-year

The Europeans were suspicious of U.S. motives in urging collaboration.

Continued on page III

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Airbus Grapples With Formula for Reorganization

By Ian Dormer

LONDON — Amid charges by the United States that Airbus Industrie enjoys an unfair trade advantage because of government subsidies, the European consortium has begun plans to restructure. The restructuring presumably would help wean the company from government aid and make it more financially accountable.

Airbus has grown considerably in recent years and now has about 20 percent of the world's airliner market, making it a leading competitor to the U.S. commercial aircraft makers, Boeing and McDonnell Douglas.

And it is restructuring in part because its product line has grown to five aircraft models and about 70 customers. It also hopes to cut costs and boost efficiency.

A consultants' report earlier this year pinpointed three main problem areas: the lack of coordination between the marketing and finance aspects of Airbus programs, the absence of an overall balance sheet, and what it called an "unwieldy organization" lacking a decision-making committee.

Airbus Industrie is established under French law as a *groupeement d'intérêt économique* (GIE). It plans to stay that way despite a recommendation from the partners' respective governments — Britain, France, West Germany and Spain — that it become a corporation.

Airbus says there is no corporation or public limited company model to follow in Europe that could satisfy its nature. About 9,000 GIEs exist in Europe, conducting all forms of business from wine growing to building helicopters. The GIE allows all Airbus partners to continue their other businesses uninterrupted.

Airbus has no financial transparency in its own right. Each partner publishes its accounts, but Airbus has no obligation to do so. The financial burdens of the Airbus projects rest solely with the partners and not with Airbus Industrie itself.

While the civil aircraft programs are separated in the partners' accounts, it does not specify which is purely Airbus. And Airbus does not see any reason why

its partners should break down their figures to such a level.

"Boeing publishes its civil program figures and does not go down to how much it makes on the 737, so Airbus is no less transparent than anyone else," it says.

In line with recommendations from the partners' governments, Airbus is appointing a finance controller or director to oversee accounts. The controller will have more power, increasing access to the partners' accounts.

Movements in the exchange rates also mean that the burden falls on the partners' accounts. The airplane business is conducted in dollars but the Airbus consortium faces costs in pounds, francs, marks and pesetas. Increasingly, subcontractors to the partners are having to quote in dollars as the burden of the exchange rate cuts into profit levels.

Earlier this year, British Aerospace made a £320 million provision in its accounts, the majority to cover expected losses on wing work for Airbus. Three years ago £1 was worth about \$1, but today it buys nearly \$2. Dealing in dollars to buy airplanes is a firmly fixed tradition, and any future deals that may be done with the European Currency Unit (ECU) are a long way off.

Airbus has rejected complaints by the United States that it enjoys an unfair trade advantage because of government funding, particularly since the U.S. industry controls 80 percent of the world's civil airliner market.

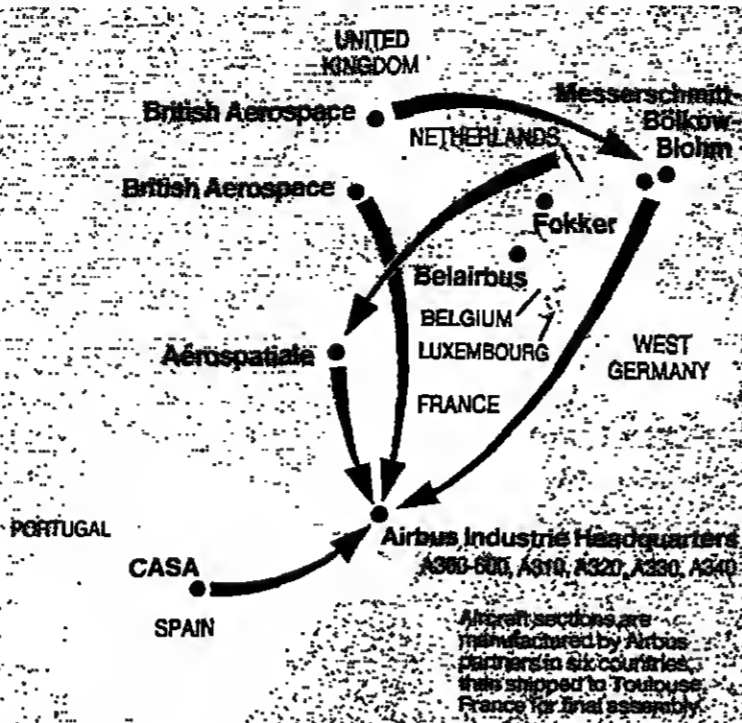
The president of Airbus, Jean Pierson, said at the end of last year that in the previous eight to 10 competitions Airbus had been beaten on price every time.

Airbus believes that the U.S. industry gets similar assistance through military contracts, reducing overheads and swelling the profits that cross-subsidize civil programs.

Airbus is owned by four European aerospace companies: British Aerospace, Aérospatiale in France, Messerschmitt-Bölkow-Blohm (MBB) in West Germany and Casa in Spain. Aérospatiale and MBB each own 37.9 percent of Airbus, British Aerospace 20 percent, and CASA 4.2 percent.

IAN DORMER is a reporter for *Flight International*.

Airbus Industrie: The European Effort



Airbus Partners

Partner	Share
France	37.9%
West Germany	37.9%
United Kingdom	20.0%
Spain	4.2%
Netherlands	(Associate member)
Belgium	(Associate member)



Airbus Industrie's A320s in final assembly.

Lon Oates/International Herald Tribune

MBB Merger Debate Raises Issue of Airbus Subsidies

By Edward Roby

BONN — The West German economics minister, Martin Bangemann, undoubtedly thought he could kill two birds with one stone when he suggested early this year that Daimler-Benz AG buy into Messerschmitt-Bölkow-Blohm GmbH (MBB), the state-controlled aircraft manufacturer that is also the German Airbus contractor.

In an ideal world, West German taxpayers might then have spared the annual burden of between 400 million and 800 million Deutsche marks (\$212 million to \$425 million) in subsidies to cover Bonn's share of the perennial losses of the European Airbus program.

And Daimler-Benz, which took to the skies three years ago with its rapid-fire acquisitions of the Dornier GmbH aerospace company along with MTU Motoren- und Turbinen-Union GmbH and the AEG AG electrical and electronics group, could be counted upon to reorganize the fragmented German aerospace industry under one private roof.

The grand scheme, however, came close to a crash landing when Daimler-Benz's chairman, Edzard Reuter, let the government know bluntly last spring that its Airbus program lacked the right stuff.

"This is not a poker game," Mr. Reuter remarked publicly after serving notice on the government that the Mercedes maker would not take a proposed 30 percent stake in MBB if that meant picking up the open-ended Airbus risks.

And the government's trouble was only beginning.

Wolfgang Korte, president of the West German Cartel Office, warned that the proposed merger would run into trouble on anti-trust grounds.

The city-state of Bremen, one of three states that own a majority of MBB, announced that it would insist on representation on the supervisory board to make sure its interests were served in any potential reorganization of MBB by Daimler-Benz.

Mr. Reuter made clear that there would be no employment guarantees in the event of a Daimler-MBB fusion and labor representatives on the Daimler-Benz supervisory board, chaired by Alfred Herrhausen, the Deutsche Bank chairman, spoke out against a merger.

West Germany's opposition Social Democrats and Greens assailed the merger proposal on grounds that it would create, for the first time in

Germany since the defeat of the Nazis, a powerful military-industrial complex that a democratic government could scarcely control.

And the U.S. government, which regards Europe's public financing of Airbus as unfair competition for Boeing and McDonnell Douglas, warned of a potential trans-Atlantic trade war if the massive Airbus subsidies continued.

In the face of such difficulties, Chancellor Helmut Kohl's center-right coalition government fell back on a tried-and-true tactic. It put the Daimler-MBB problem on ice for the summer recess. The whole issue of how to reorganize the domestic aerospace industry was tentatively slated to resurface at a cabinet session in September, by which time it was hoped the public debate and unwelcome publicity might have cooled.

Although a Daimler-Benz stake in MBB seems preordained, terms of the final arrangement are more likely to please Mr. Reuter and Mr. Herrhausen, whose bank owns 28.1 percent of Daimler, than the government, which is struggling to curb deficit spending.

At worst, the taxpayers will continue to bleed for Airbus while Daimler-Benz goes on to dominate the rest of the domestic aerospace scene and to consolidate its new role as the dominant military contractor.

M. R. HERRHAUSEN, in a *Der Spiegel* magazine interview, suggested that critics of the Daimler-MBB marriage lack the vision to recognize that West Germany now needs an industrial policy with global reach.

"One can often be a prerequisite for successful competition," said Mr. Herrhausen. "We must try to create a European Boeing."

The Deutsche Bank chairman is already credited with masterminding Daimler's high technology takeover with the acquisitions of Dornier, MTU and AEG, which supplies electronics for tanks, warplanes and warships as well as submarine torpedoes, radar, satellite and fire guidance systems and equipment for mine warfare.

MTU supplies the turbine engines for the Leopard 2 tank and for the Tornado plane, manufactured by a consortium of West German, British, Italian and Spanish companies. Dornier, in addition to civilian aircraft, makes drones for the military and, in cooperation with France's Dassault, manufactures the Luftwaffe's light Alpha Jet fighter-bomber.

But Daimler has had ample reason

to be disappointed with its 65.5 percent stake in Dornier. For one thing, Dornier's much larger competitor, MBB, skins the cream from the military aircraft contracts. And the new federal military budget eliminates funds for a planned modernization of the Alpha Jet while earmarking large development outlays for the proposed European Jäger '90 fighter project, which is being handled by the same Tornado consortium that includes MTU and MBB.

After settling for a compromise in a protracted power struggle with the Dornier family over a proposed increase in company capitalization, Daimler returned a block of stock to the family, reducing its holding to 54 percent and raising the family interest to 42.5 percent. All this makes MBB considerably more attractive.

Before the summer recess, Mr. Bangemann is said to have suggested a merger arrangement in which MBB's civilian transport and Airbus activities would be separated from the rest of the company. The government would then take a 15 percent stake in the Airbus manufacturing sector. It would continue to finance development and marketing of the large-range A-330-340 models and make up losses from adverse currency fluctuations.

Finance Minister Gerhard Stoltenberg has spoken of a government guarantee until 1994 at a dollar exchange rate of 1.70 marks. The Airbus break-even point is supposed to be around 2 marks to the dollar. The current federal budget allocates nearly 1.1 billion marks for Airbus after 457 million marks the previous year, levels that even some coalition politicians have called exorbitant.

A merger with MBB would nicely complement Daimler's already brightening arsenal because MBB holds major interests in several French and German armaments and aerospace groups, including a 50 percent stake in RTG-Raketen Technik GmbH, which in turn has a one-quarter interest in Leopard 2 tank producer Krauss-Maffei AG of Munich. Like France's Matra SA, in which Daimler recently took a 4 percent interest, RTG specializes in rocket launching systems.

MBB's helicopter division, together with MTU and AEG, are contractors for the new French-German PAH-2 antitank helicopter that is supposed to be ready for production by 1991.

EDWARD ROBY is the English-language editor of *Verenigte Wirtschaftsdienste GmbH*, a West German economics agency based in Frankfurt.

Traffic Control

Spinning a Cocoon for Air Safety

By Graham Warwick

LONDON — Daily, U.S. and European newspapers carry reports of congested airports, delays, crowded airspace and near-misses. Airlines blame the air traffic control authorities for not investing enough in people and equipment. The authorities blame the airlines for scheduling more flights than the air traffic system can handle.

Both sides, however, seem unwilling to embrace new technology that could alleviate many of the ills afflicting the airspace management systems of both the United States and Europe.

The air transport industry and the air traffic control community are among the most conservative in aviation. This is because lives are at risk and safety standards must be maintained. But, by their reluctance to embrace new ideas, both sides could be endangering passenger safety by overloading the existing airspace management system.

Anyone who cares to look up can see that the skies are not crowded. More than one aircraft might be visible, but there should be a lot of space between them. Maintaining an adequate separation between aircraft is the task of the air traffic controller.

Because aircraft are almost always visible on radar over the United States or Europe, he can do this with a fairly high degree of confidence. Over the Atlantic, Pacific and less-populated areas of the world, his knowledge of aircraft position is not so extensive, so aircraft are wrapped in a far larger "cocoon" of safe airspace.

Even today, air traffic control is largely procedural. Aircraft are funneled into one-way corridors with safe distances between corridors and between aircraft flying along the same corridor. This inevitably puts limits on the number of flights that can be pushed through a corridor at any given time.

More flights can be accommodated if the

separation between aircraft and between corridors is reduced. However, the possibility of gross navigational errors, or controller mistakes, sets the minimum separation.

Navigation is the responsibility of the air traffic crew. Today, an aircraft's position can be determined with an accuracy exceeding the minimum separation allowed because of the equipment available. In fact, equipment under development, such as satellite navigation systems, could give aircraft position to within a few tens of meters, which would theoretically allow separations to be reduced dramatically.

Maintaining safe separations between aircraft is the responsibility of air traffic control, however, and the controller must always allow for the worst-case navigational error.

Where aircraft are visible on radar, the controller has several new developments to look forward to, such as computer programs that will detect and warn of conflicting flight paths and others that will allow aircraft speeds to be adjusted to assure they arrive at an airport at steady intervals, avoiding the bunching and stacking that is prevalent today.

None of this allows the controller to reduce separations, however, although it does improve airspace efficiency somewhat. If the controller

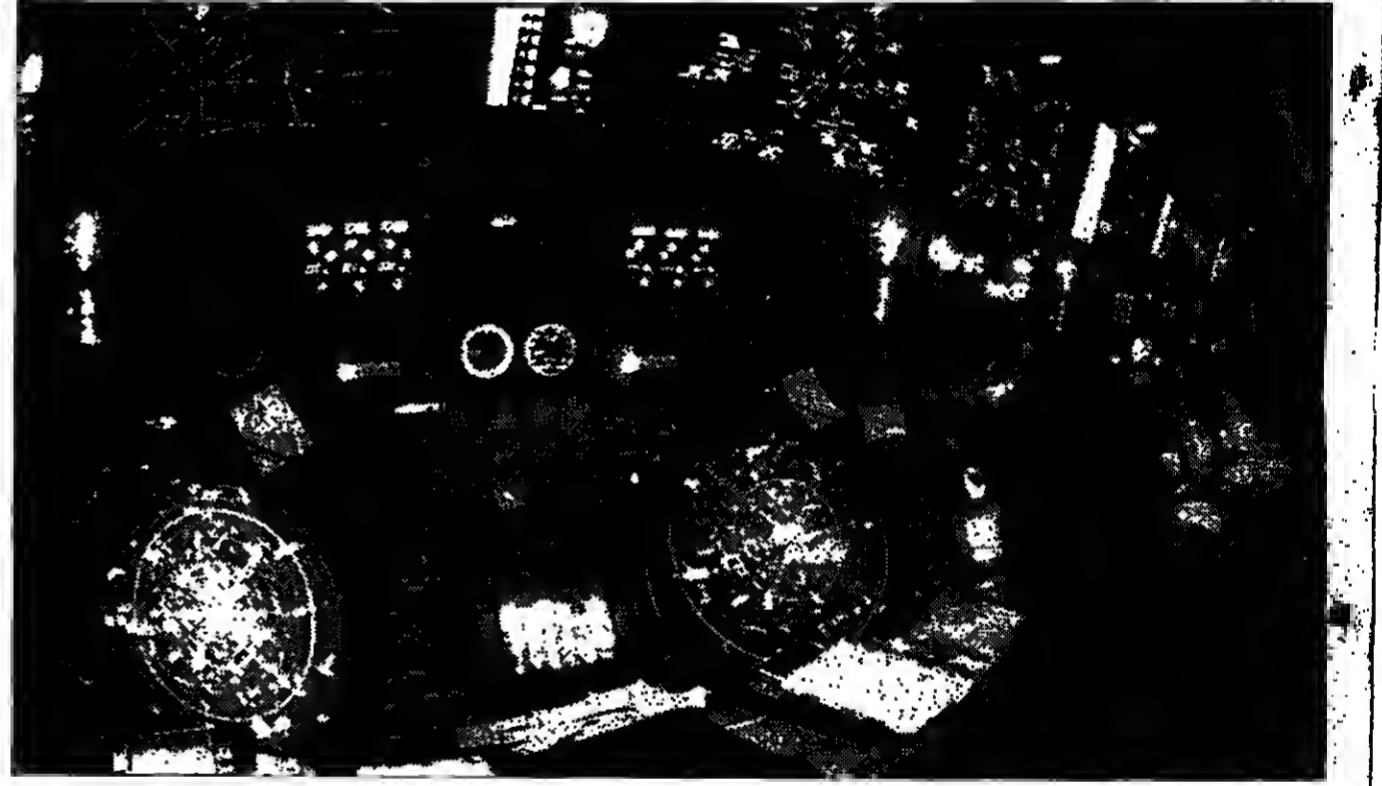
had access to aircraft position as measured on board the aircraft itself, preferably using the latest satellite navigation techniques, separations could be reduced — provided that all aircraft were suitably equipped.

Aircraft position could be transmitted to the ground via a radar datalink, or via satellite where radar cover is not available. Once in the air traffic control computer, the position report would be handled just like today's radar returns.

There are many obstacles to such a system, called automatic dependent surveillance. Today's satellite navigation systems are primarily for military use and as such do not meet the exacting integrity standards demanded for civil use. On-board navigation systems which do not require any outside reference are already widely used, but are unfortunately less accurate. A combination of the two, however, looks promising.

Airlines are less than enthusiastic about the cost of fitting new, more accurate navigational equipment and are unwilling to unless required by the authorities, who in turn are concerned about recovering the cost of a new airspace management system.

Commercial pressures dominate. Airlines are beginning to install satellite navigation and



Monitoring screens at the Federal Air Route Traffic Control Center near Washington.

Brian Doherty/Photographic Society

communication equipment where it offers an operational advantage, such as the ability to follow fuel-saving flight plans or communicate useful information back to base. The ability to offer passengers telecommunication facilities, for example, is the major force behind satellite communications.

Airspace authorities appear to be waiting for the airline industry to reach "critical mass" in its use of new equipment before adapting the airspace system.

The alternative is to pass laws requiring all aircraft to re-equip to use the new system. Such

a task is almost impossible on an international scale, but if the United States were to adopt such a track, the rest would have to follow, or be barred from U.S. airspace.

In effect, this is what is happening with the microwave landing system that is just beginning to be installed at U.S. airports, and what will happen with the traffic alert and collision avoidance system (TCAS), scheduled to be mandatory on all U.S. airframe by early next decade.

There are those who argue that the United States is pushing TCAS through too soon,

before it is proven useful or safe. The alternative is an interminable delay such as has afflicted the microwave landing system, despite its international adoption as the successor to the present instrument landing systems.

With today's separations, the pressure on U.S. and European airspace is mounting. Any significant reduction in airport delays requires those separations to be reduced.

GRAHAM WARWICK is the news editor of *Flight International*.

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Upgrading Safety

Soviets Push Marketing For MiG-29s

Continued from page 1

While the Soviet Union has begun to engage in "profit sales" over the past few years, "nothing has been so organized, so coherent, as the effort to sell the MiG-29," Mr. Karp said.

One of the reasons may be the skyrocketing cost of modern fighters, which has led to fewer planes rolling off Soviet assembly lines than before. Many of the Soviet Union's best allies in the Warsaw Pact may never receive the MiG-29 because they simply cannot afford the price, whereas they were high on the list to receive the MiG-21 and MiG-23 when those planes were exported in the 1960s and 1970s.

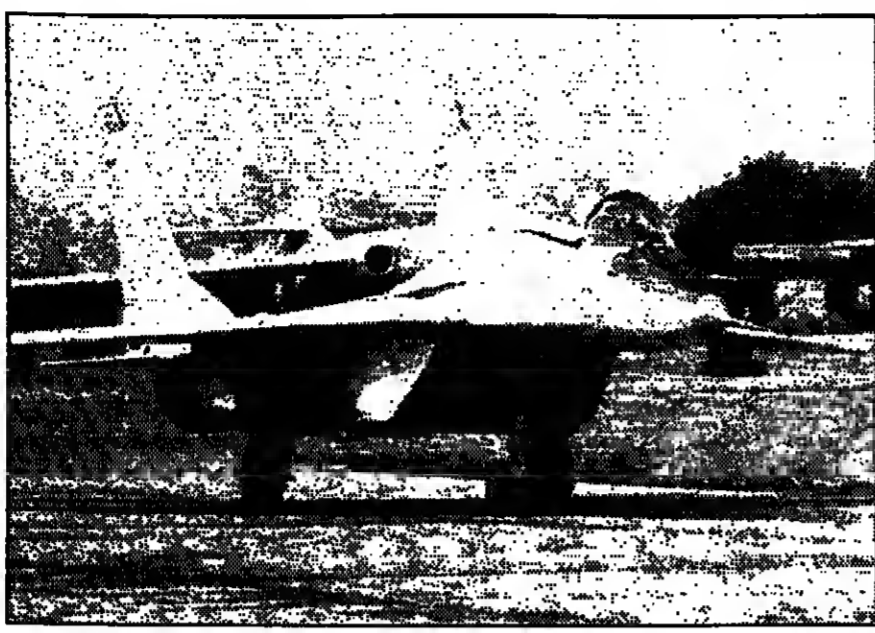
Another reason may be that the Soviets realize that the MiG-29 may not "survive" the technological advances of the 1990s. Either they sell it today, or they absorb the entire program cost alone.

Further clues to just how advanced the MiG-29 really is will be found at the Farnborough air show. Two areas in particular have been nagging specialists since the first "public" appearance of the Fulcrum in Finland in 1986: the performance of the Fulcrum's engine — at first assumed to be an upgraded Tumansky R-33D turbofan — and its radar.

According to Renato Contin, an aeronautical engineer writing in the German monthly Military Technology last year, the aircraft seen in Finland needed more powerful engines than the R-33D, which Western sources believe develops 50 kN dry thrust and 81.4 kN with afterburner, to achieve the performance most experts attribute to it.

Otherwise, the plane "is much lighter than it looks, or its thrust-weight ratio is much less satisfactory than assumed," Mr. Contin writes, giving it less maneuverability than any of its Western equivalents.

As for the radar, some published accounts attribute the MiG-29 with a Soviet version of



The new Soviet MiG-29.

the AN/APG-65 radar, currently used on the NATO F/A-18 and widely acknowledged as the most advanced radar in service aboard a Western fighter today. The Soviets are said to have stolen — or bought — a full set of blueprints from the manufacturer, Hughes Aircraft Co.

However, Mr. Contin argues that even with the blueprints, the Soviets would have difficulty mastering manufacturing technology, which has posed problems to West European licensees receiving "full support and complete technology transfer from the U.S." Instead, he believes the MiG-29 uses an earlier AN/APG-99 radar, obtained from an Iranian F-14 in 1979.

Both radars are of the "look-down shoot-down" category, allowing them to distinguish targets below them from ground clutter. Either way, the MiG-29 has the most advanced avionics package ever sold on a Soviet fighter. But for an aircraft as expensive as the MiG-29, it might not be good enough.

Beyond the initial sales success, "there are only a few other countries out there with the money, and with the requirement," said Mr. Karp. "The U.S. is in the process of selling F-

16s to 18 air forces. The Soviets will have a difficult time finding 18 export clients for the MiG-29. The politics just works against them."

But the Soviets are proving tough competitors, as the French aerospace concern, Avions Marcel Dassault, learned in India.

"I fight two-thirds of the time against the U.S.," said one top Dassault executive, "and a third of my time against the Soviets. And I have learned to respect my competition."

The Soviet strengths, according to the executive, were good equipment (including the MiG-29 avionics), political backing and a "completely original financial package," which often includes enticing barter agreements. Beyond further sales to Iraq and India, Dassault also expects the Soviets to market the Fulcrum in Nigeria and Algeria.

KENNETH R. TIMMERMAN is the editor of *Mednews*, a newsletter specializing in Middle East defense issues. He is the author of the forthcoming "Le Jeu des Missiles," a study of arms sales to Iran and Iraq.

U.S. Focuses on Crew Training

By Laura Parker

WASHINGTON — When a Delta Airlines pilot came within 50 feet of colliding with another jumbo jet over the North Atlantic in July 1987, U.S. officials wondered how a senior captain could fly an L-1011 nearly 60 miles off course.

A month later, when two Northwest Air Lines pilots crashed a sophisticated MD-80 onto a highway in Detroit, killing 154 on board, they wondered again. How could experienced pilots neglect to set the jet's wing flaps before taking off, an act as routine in flying as closing the door on an automobile.

"How do you stay professional?" the FAA administrator, T. Allan McArtor, asked at the time. "How do you stay vigilant?"

Those two events, plus a rash of other potentially serious gaffes by Delta pilots, spurred the first full-scale review of pilot training and qualification standards by the Federal Aviation Administration in more than 30 years.

Now, nearly a year later, the FAA is about to launch a program aimed at training pilot crews to work more efficiently together. The agency is also preparing the final language on a new regulation making windshear training in a simulator mandatory. The FAA is also revamping regulations dictating the number of hours pilots can work on long-haul flights.

And, in an effort to encourage manufacturers to standardize cockpit instrument panels, it is advising airlines that further training may be required for pilots assigned to fly different makes of the same model.

"Last summer's Delta incidents did not involve a start-up airline. There were no financial problems," said Don Beaudette, deputy director of the FAA's flight standards office. "The only common thread we found was crew performance and judgment was at fault."

The FAA plans to shift away from the narrow focus of judging a pilot's skills on his ability to pass a flight test. The agency hopes to concentrate more broadly on training, especially cockpit management training, in which the airline trains whole crews to work together, instead of monitoring the performance of a solitary pilot completing exercises alone in a flight simulator.

The program will be voluntary, lasting three to five years while the airline industry calls out the best methods that the FAA intends to incorporate into a mandatory rule.

United Air Lines and Northwest are considered leaders in the field already. In the late 1970s, United began training pilots to work together as complete crews after a review of nine United accidents revealed that only one was caused by a mechanical failure in the airplane.

The most dramatic example occurred in 1978, when a United DC-8 ran out of fuel and crashed six miles (9.6 kilometers) from the airport at Portland, Oregon. The plane had circled over the airport for an hour until it ran out of fuel and its four engines quit, while the captain tried to correct a problem with the landing gear. The cockpit voice recorder is played as part of United's training course, and on it, the co-pilot and the flight engineer fret about the rapidly diminishing fuel, but they never directly confront the captain.

"What you don't see are breakdowns in

communications," Mr. Beaudette said. "The management of a crew. You don't see them interact with other people in the cockpit."

These changes are aimed at reducing, whenever possible, the human error rate. Jet aircraft have become so efficient and reliable that when something goes wrong, it's usually caused by human error and the human is usually the pilot. The National Transportation Safety Board says 65 percent of all major airline accidents and 95 percent of commuter accidents are due to pilot error.

But much of the rest of the FAA's wholesale review of pilot rules stems from the huge changes that have occurred in the pool of pilots flying since the airlines were deregulated in 1978.

In the last four years, according to government figures, the airlines have hired an average

ment training and it's good, solid, quality training."

The commuter industry is hit hardest with rapid turnover in hiring. Of 5,300 pilots flying for commuters, 4,010 were hired last year, according to the Future Aviation Professionals of America. A third of them moved from one commuter to another; the rest were hired with air taxi, private corporation or other general aviation experience in their backgrounds.

The General Accounting Office recently criticized airline hiring practices regarding background checks for safety violations, and noted that three recent commuter accidents had safety violations of which their employers were not aware.

By February, the commuter industry had also piled up six accidents in four months, the last of which involved a co-pilot, with a spotty training record who flew into a grove of North Carolina pine trees one rainy February night.

The FAA is now moving toward requiring commuter pilots to complete the same kind of training that pilots for major carriers undergo.

The kind of sophisticated training maneuvers that the major airlines conduct in flight simulators still eludes commuter airlines. Simulators are multimillion-dollar investments, and many commuters are too small to finance them. Windshear training, for example, which will become a requirement for all pilots flying turbo-jet aircraft with more than 30 seats is only safely conducted in a simulator.

But the issue of crew experience was brought most sharply into the public spotlight last November. The FAA's review was barely underway when a Continental DC-9 crashed while taking off from Denver in a blinding snowstorm, killing 28.

ALTHOUGH investigators of the accident are centering their probe on the possibility of icing on the jet's wings, the plane was being flown by the co-pilot, a 26-year-old former commuter pilot who had only flown as a DC-9 co-pilot once before and had never flown in snow. The captain of the flight was a senior employee, but he had only moved up to the DC-9 captain's seat 17 days before the crash.

The National Transportation Safety Board has yet to determine a cause or recommend change. But the board did address the issue of crew pairing based on levels of experience in 1986. After several commuter accidents, the board recommended that inexperienced captains not be paired with inexperienced co-pilots.

Pairing inexperienced pilots, particularly at expanding airlines, is a practice throughout the industry. Two months after the accident, Mr. McArtor urged the airlines to avoid pairing inexperienced pilots in the same flight, but he was overwhelmed by objections from the airlines and the pilots' union. Consequently, the FAA's package of pilot rule reforms does not address crew experience levels or pairing.

Mr. McArtor's advisory was the first time the FAA has attempted to place a value on pilot experience as a means of measuring safety. The Air Line Pilots Union, which represents 39,000 pilots, countered that if a pilot needs more experience in order to fly safely, it is the airline's training program that is at fault.

LAURA PARKER is a Washington Post staff writer who covers the transportation industry.



T. Allan McArtor, FAA administrator.

of 9,700 new pilots a year. Pilot hiring is expected to continue at high levels for the near future.

At the same time, the number of airline pilots who learned to fly in the military is declining. What this means is the average level of flight experience is holding steady at about 3,000 hours. But the kinds of experience pilots acquire before joining a major carrier has fallen off.

For example, the experience level in jets dropped from 2,300 hours in 1983 to 800 hours in 1985, according to the Future Aviation Professionals of America, which tracks hiring statistics for pilots.

Airlines are also finding that new pilot employees lack the kind of rigorous training and experience at instrument flying that pilots trained by the military receive.

"That's one of the things the airlines have identified where they need to spend some time," said Walter S. Coleman, an assistant vice president of the Air Transport Association, the major airlines' lobbyist, and head of a task force that assisted in the FAA's pilot rules review. "In the military, there is a lot of instru-

Europe Moves Ahead to Develop Fighters

Continued from page 1

pre-development program for General Dynamics new aircraft.

In an effort to spread the overheads of its Rafale development, France's Dassault has also been courting other European countries to join its program, including Belgium and Spain. Overseas sales potential for the aircraft is one attraction. Lighter than the EFA, the Rafale has been designed with traditional Dassault export markets in mind.

Nevertheless, it is the EFA which is destined to arm the air forces of the principal European NATO powers.

A total of eight EFA prototypes are to be built in comparison to five for the Rafale. Three are to be based in Britain, two each in West Germany and Italy and one in Spain. The aim is for each of the Eurofighter airframe

consortium members — British Aerospace PLC, Messerschmitt-Bölkow-Blohm GmbH, Aeritalia and Construcciones Aeronauticas SA — to establish a production line.

The program, managed by the European Fighter Management Agency, is based in Munich and is responsible for the award of contracts to Eurofighter companies and to participants in the EFA's new 20,000-pound thrust EF 200 engines. Members of Eurojet are Rolls Royce, MTU Motoren-und Turbinen-Union GmbH, Fiat Aviazione and Spain's Sener.

Many of the technologies for the EFA, as well as other fighter aircraft under development, have still to be tested and proven.

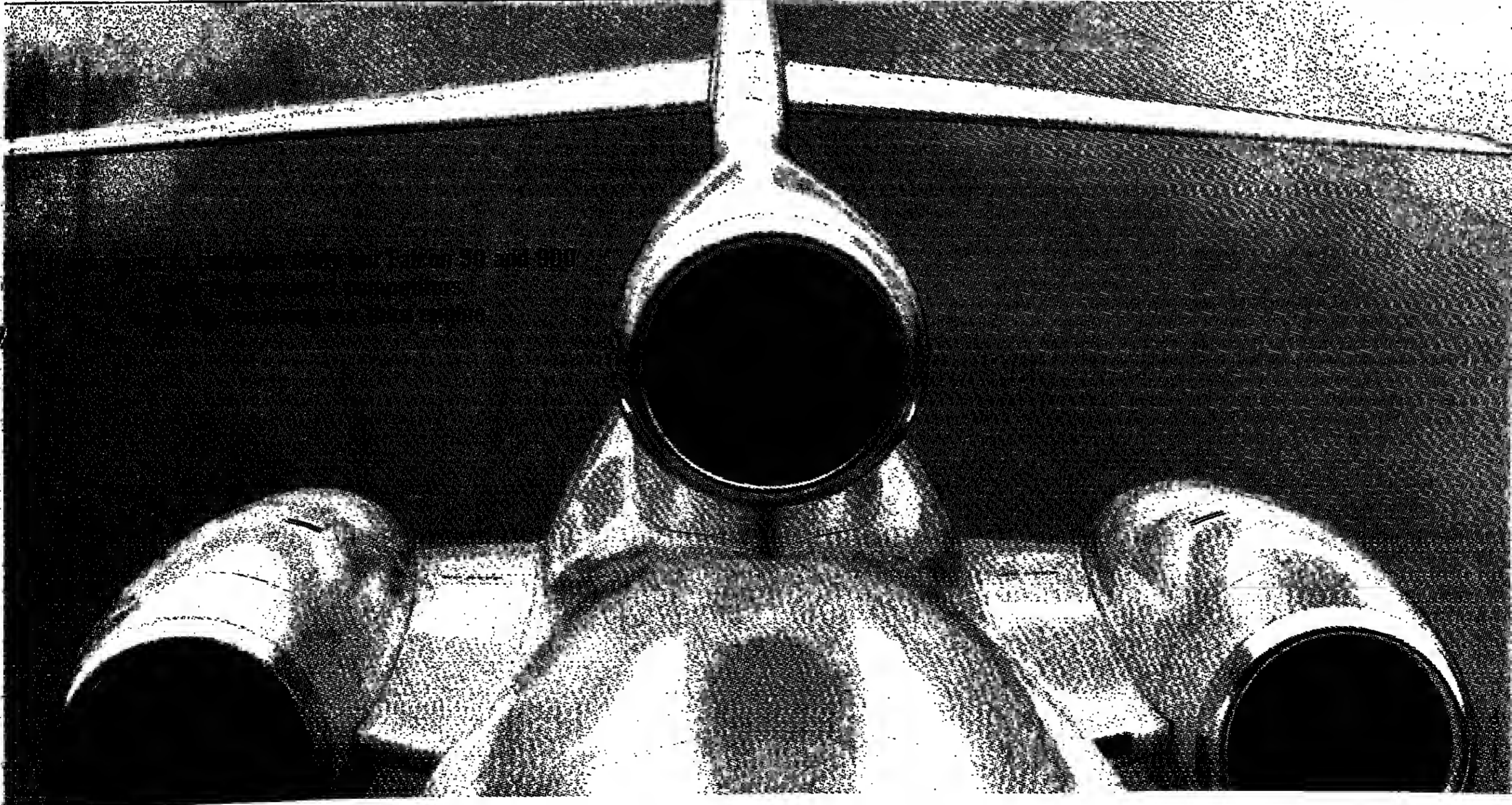
One major development decision pending on the EFA is its vital radar fit, which will ultimately comprise 10 percent to 15 percent of

the unit cost of the aircraft. A U.S. dimension is again seen in the competition between Emerald, a development based on Hughes Corporation's APG-65 radar, and the ECR90 under development by the Ferranti company of Britain.

The promoters of the Emerald argue that only 10 percent to 15 percent of the content of the new design would be U.S. sourced. However, Ferranti which is also offering its Blue Vixen radar, says that to have anything but an all-European radar on board could mean Washington might impose restrictions on sales outside the NATO area.

The EFA and Rafale programs would seem to pose a considerable challenge to U.S. manufacturers in the export markets of the 1990s.

ROBERT BAILEY is a London-based journalist who specializes in aviation and technology.



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Rocket Firms Looking to SDI

By Graham Warwick

LONDON — The predicted boom in the commercial satellite launch business following the shuttle disaster in January 1986 has so far benefited few companies. Predictably, it is the big names in aerospace that have picked up the business lost by private-venture companies when the United States banished all commercial payloads from the vehicle.

For those companies who were forced out of the shuttle program, the launch needs of President Ronald Reagan's Strategic Defense Initiative represent the best future business prospects. The fate of SDI, and therefore the private launch industry, now rests with the next U.S. president, however.

The National Aeronautics and Space Administration's marketing of the shuttle in an effort to establish the vehicle's commercial viability only served to distort the dynamics of the satellite launch business. The U.S. launcher industry, set up on contracts to feed the shuttle, proved unable to compete effectively with Europe's aggressively marketed Ariane.

It became a two-horse race and, after the shuttle disaster, Ariane would have had a clear field had it not been for some failures and subsequently lengthy grounding of its rockets. Perhaps as a result, ArianeSpace, the Ariane operating company, has not benefited nearly as much as expected from the shuttle's misfortunes.

The U.S. launcher industry has benefited, however. The few launchers available were quickly snapped up and production restarted. McDonnell Douglas was awarded the crucial contract to provide the U.S. Air Force with a medium launch vehicle to orbit navigation satellites originally destined for the shuttle.

To achieve this, the company upgraded its established Delta booster. Heavily underwritten by the military contract, Delta II is now available commercially.

General Dynamics announced a \$100 million program to build Atlas Centaur boosters for commercial customers and was later rewarded with a U.S. Air Force contract to supply medium launch vehicles to orbit defense communications satellites.

Martin Marietta, already under contract to the U.S. Air Force to build Titan IV boosters to work in conjunction with the shuttle before Challenger exploded, saw its

production run extended after the disaster. The company has also secured customers for its commercial Titan III.

All three U.S. companies offer boosters originally developed for the military and in production for the military. Wholly private space ventures are few and far between, even in the United States. The first privately developed space vehicle, Orbital Sciences Corp.'s Transfer Orbit Stage, is a motor designed to boost satellites into orbit from the shuttle's payload bay or the top of a Titan rocket. So far, only one has been sold, to boost NASA's Mars Observer on its way to the Red Planet in the early 1990s.

Undaunted, Orbital Sciences, along with Hercules Aerospace, has proposed a novel air-launched winged booster, called Pegasus, primarily for use during the development and test stages of the SDI defense shields. The SDI organization's need to launch small experimental satellites over the next few years could provide the impetus the private-venture rocket industry needs.

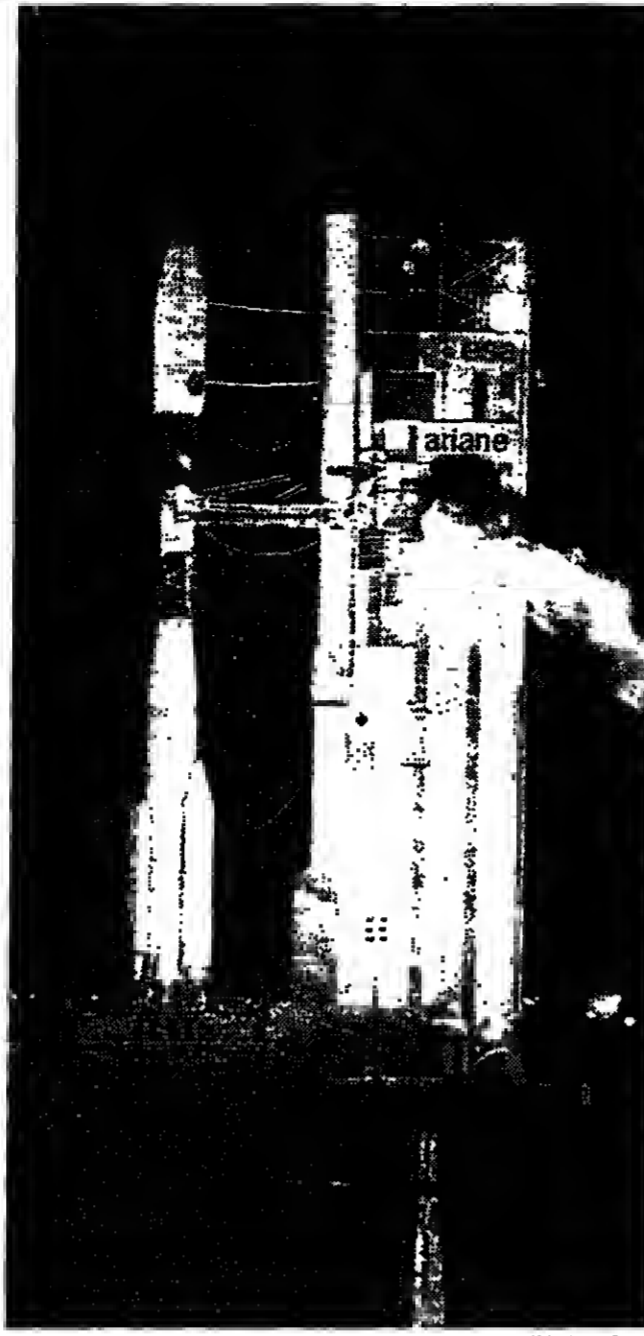
Because of the enormous investment needed to develop a rocket capable of boosting communications satellites into geostationary orbit 22,000 miles (35,800 kilometers) above the equator, most private-venture rockets are capable only of boosting small payloads into low orbits, at least initially.

This is sufficient to meet the SDI's present needs and, it is argued, could provide researchers in other fields with low-cost access to space. Small Earth observation satellites, or technology experiments requiring microgravity, could be cheaply boosted into orbit for short periods using such vehicles.

If the next U.S. president elects to continue the SDI program, then some or all of the private-venture companies, including Space Services, American Rocket or Pacific American Launch Systems, could find themselves with a viable business. Commercial contracts will inevitably follow.

The shuttle's misfortune saw two other forces emerge on the commercial launch scene, China and the Soviet Union. China has so far had the most success, but finds its entry into the big league of geostationary satellite launching presently blocked by the United States' refusal to allow American-built satellites to enter the Communist country.

That could change with Australia's preference, part financial,



Launch of Ariane IV, which carried three satellites.

part political, to launch its next generation of Ausat communications satellites on China's Long March booster. Australia has already chosen Hughes Aircraft to build the satellites and the U.S. company is awaiting a decision on technology transfer before signing a deal.

The Soviet Union has perhaps the most complete range of launch vehicles available anywhere, up to the mighty Proton used to orbit geostationary satellites and planetary probes, and all are being marketed commercially. Despite low prices, competitive insurance rates, Western visits to Soviet launch sites, and assurance on sat-

ellite security, the Soviets have yet to secure a major customer. Whether the shuttle flies later this month as planned, its role as a satellite launcher will from then on be severely curtailed. The balance has shifted decisively back in favor of expendable launchers with the highest of them all, the Advanced Launch System, now being studied by the U.S. Air Force.

After the predatory pricing of the early shuttle and Ariane days, launch costs are also likely to stabilize as industry, and not governments, comes to grips with making the way into space pay.

High Costs, Demand Spur Leasing

By Robert Bailey

LONDON — The future for aircraft manufacturers has rarely looked better. Production lines and order books are expanding both in Europe and North America as airframe and aero-engine producers and their related suppliers gear up to supply the hardware for an air travel market that is expected to double in the next 12 years.

Manufacturers envisage a demand for between 5,700 and 7,800 new airliners valued at \$278 billion to \$342 billion up to the year 2005. About two-thirds of the demand for short-range aircraft is expected to result from the retirement of aircraft delivered during the late 1960s and early 1970s.

While a definite requirement has been identified, the financing of such a huge demand for capital equipment poses a dilemma. Only a small percentage of the world's airlines are thought to be able to support their acquisition needs.

The book worth of world fleets, totaling about 7,500 aircraft, is estimated at about \$125 billion. This relatively small asset base, combined with historically low profits in the industry, means that airlines will be able to finance directly only a diminishing proportion of their new aircraft.

To bridge the gap, a trend toward asset-based financing is steadily gaining momentum. In this procedure the aircraft itself is the principal form of security rather than the guarantee of the end user or of the government of a state-owned airline.

The trend has already seen the emergence of major leasing companies. Guinness Peat Aviation, a multinational group founded in 1975, is preparing for the expected surge in demand for new aircraft and an increase in the need for operational leases between now and the year 2000. The group, based at Shannon, Ireland, currently has orders and options on Airbus, Boeing, McDonnell Douglas and Fokker airliners valued at \$8 billion.

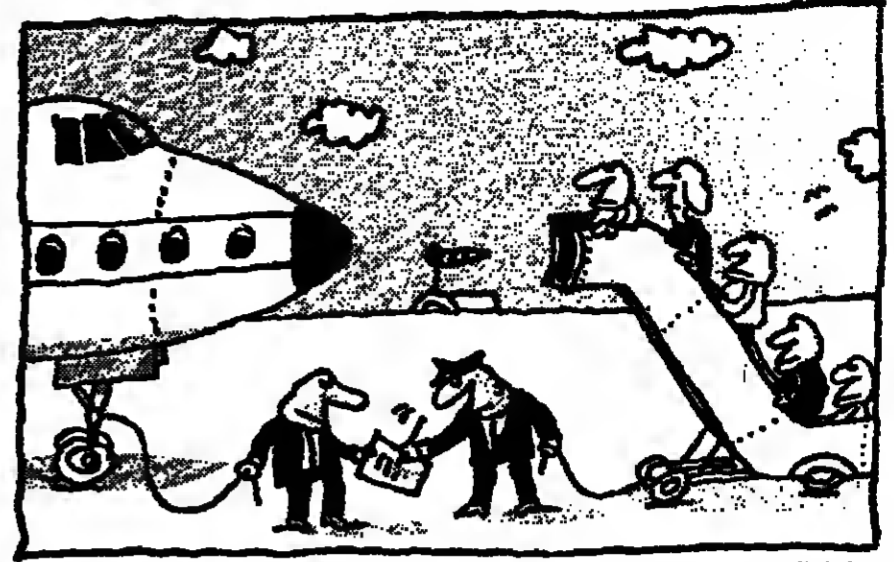
The International Lease Finance Corp., based in Beverly Hills, California, placed the largest civil aircraft order in history this year with Boeing and Airbus for 130 airliners, which, with options, could be worth a total of \$7 billion. Steven Udvar-Hazy, co-founder of the leasing company, said it serves as a financing vehicle to relieve airlines of the financial burdens of acquiring wide-bodied aircraft.

The airlines' effort to accommodate larger numbers of passengers is one factor in the demand for new aircraft. There are other pressures, including the imposition of noise regulations, changing fuel prices and technological developments that are rendering older aircraft models obsolete.

More sweeping noise regulations will, in particular, force the replacement of many fleets while the markets themselves are changing. The trend toward operating leases that allow for termination of the lease stems both from a desire to keep aircraft off the balance sheet and the need to establish flexibility in the makeup of aircraft fleets.

It is, however, the sheer size of capital outlay involved in purchasing that is driving airlines toward leases and allowing expansion to take place much faster than at any other time.

American Airlines, for example, ordered 25 new Airbus A-300-600Rs and 15 Boeing 737-300ERs this year on 20-year operating leases.



The company also has 70 McDonnell Douglas MD-80s with 90 options on order as well as eight Boeing 767-200s with financing arranged through a complex cross-border leasing transaction whereby the aircraft is leased from Japan.

The alternative to leasing for American Airlines, the biggest domestic carrier in the world,

expected to garner similarly high shares of the available market.

While creating a dynamic market for manufacturers and financiers, not all are enthusiastic about the accelerated trend toward leasing. Some in the industry are questioning whether in the long term airlines can survive solely on their core business as operators and the uncer-

To bridge the costs gap, a trend toward asset-based financing, in which the aircraft itself is the principal form of security, is gaining momentum.

was a daunting multibillion-dollar expenditure that would have had to have been committed in the next few years.

Carriers and manufacturers, as well as aero-engine producers, are also entering the leasing business. Australia's Ansett has created a leasing subsidiary that has ordered a dozen Boeing 737-300s and six McDonnell Douglas MD-83s. British Airways, McDonnell Douglas and Guinness Peat Aviation have an agreement to lease the MD-11s ordered by Guinness Peat and those on order by British Caledonian, which was taken over by British Airways earlier in 1988.

Meanwhile, Rolls-Royce has entered an agreement with Guinness Peat Aviation to purchase a fleet of Boeing 757 aircraft powered by its engines in a move to exploit a burgeoning market for medium-capacity airliners equipped for extended range operations over water.

Within the next three years Guinness Peat expects 20 percent of all aircraft to be on the leasing companies' books, compared with 1,000 at the end of 1987. The group estimates that its share of the operating lease market will be one-fifth by 1990. International Lease Finance Corp. and San Francisco GATC also are

tain cash flows that are a feature of service industries.

By taking aircraft off their balance sheets, it is argued that airlines may also be forfeiting an interest in the residual value of the aircraft they operate.

For lessors, despite their confidence, there are also risks. They have to be highly accurate in their prediction of trends in aviation, technology and the lifespan of different aircraft in particular markets.

There are uncomfortable parallels in other sectors. Leasing has also traditionally been associated with shipbuilding, and it is salutary to consider that a crude carrier supertanker costing \$50 million 15 years ago now trades for scrap at \$5 million.

However, aircraft values in the same period have shown a different trend with values often increasing. Used DC-8s are selling for more today than 10 years ago, while a Boeing 747-200, purchased in 1972 for \$25 million, could be worth as much or more today.

Such evidence has boosted aircraft leasing and is also allowing huge bulk orders of new airliners to be placed, giving manufacturers their biggest boom in years.

Publicity for Military

Pentagon Remains Committed to Shows As Invaluable to Its Recruitment Efforts

By John H. Cushman Jr.

WASHINGTON — Ever since barnstorming daredevils first dazzled groundlings more than 60 years ago by turning audacious loops in their flying machines, the air show has been a fixture of aviation public relations.

But high-performance aircraft and huge crowds have added new elements of risk to today's air shows, which have become more dangerous as well as more dramatic displays of civilian and military aircraft.

The accident a week ago in an air show at an American air base in Ramstein, West Germany, where three Italian jet fighters collided and one plunged in flames into a crowd, killing 49 persons and injuring nearly 400, has made some people wonder whether the demonstrations are worth the expense and the risk they entail. They also question the U.S. military's participation in such events.

West Germany has banned military air shows since the accident. The disaster has also heightened demands for broader restrictions on low-level training flights by military aircraft, already a contentious issue in Germany.

But the Defense Department, which values aerial circuses for their publicity and regards them as recruiting and morale-building tools, has no plans to change its policy. Over the weekend, crowds in Cleveland watched the U.S. Navy's Blue Angels team, while the U.S. Air Force's team, the Thunderbirds, flew in Toronto.

Recruitment and public relations are the explicit goals, and the fact that the shows continue under tight safety controls despite occasional fatalities demonstrates that the military views the costs as acceptable, no matter how undesirable the losses.

The navy's Blue Angels will spend \$12.3 million this year, making 72 appearances, a spokesman said. The navy's direct advertising budget for recruiting is \$17.7 million. The air force's Thunderbirds spend about \$7 million a year.

Is this a frivolous use of military funds? No, said Defense Secretary Frank C. Carlucci 3d, adding that no review of the air show policy was under way.

"You have to accept the fact that a significant element of any fighting force is its morale," he said Thursday. "You could make the same argument about bands, or marching. It's all part of morale and discipline. The inspirational element, if you will, of demonstrating your capabilities is a very useful recruiting tool, and it is part of the muscle and sinew of military forces."

Since 1946, when the first military flight demonstration team was formed, there have been only a handful of fatal accidents in air shows, a Pentagon spokesman said. But there have been many more accidents in training for the shows.

In the last 42 years, the ovary flying team has had 46 accidents, killing 22 pilots and two ground crew members and losing 39 aircraft. About 117 million spectators have watched the

navy shows. Twice as many have watched the air force team's displays, and 19 air force pilots have been killed.

Accidents related to flight demonstrations come in many varieties.

A KC-135 tanker crashed at Fairchild Air Force Base in Washington in 1987, killing

it hit the bomber's exhaust air in a sharp banking maneuver.

At Fort Bragg, North Carolina, a C-130 cargo plane crashed while trying to demonstrate the low-level drop of an armored vehicle onto the runway, killing five servicemen in July 1987.

And, in 1982, in the worst accident involving the Thunderbirds, four T-38 training jets crashed one after another at Nellis Air Force Base in Nevada as they flew in formation practicing an exercise in which they were to line up, swoop low and then climb into a loop. All four pilots were killed.

There have been other air show crashes overseas, as well. In 1982, 46 people on an army Chinook helicopter, including an international parachuting team, died when the aircraft crashed near Mannheim, West Germany.

At American air shows the Federal Aviation Administration prescribes strict limits on flight operations by both military and civilian aircraft in an effort to limit danger to crowds.

The Pentagon says it rigorously complies with these rules, and it often refuses to participate in air shows because the grounds do not allow enough space for military flight maneuvers.

The FAA has no jurisdiction over air shows in foreign countries, but the American military tries to adhere to equally strict standards when it is operating abroad.

JOHN H. CUSHMAN JR. is a reporter for The New York Times.

Show Stakes Are High

Continued from page 1

show grow larger than Farnborough in terms of exhibitors and visitors.

The head of Messerschmitt-Bölkow-Blohm GmbH, Hanns Arnt Vogels, has suggested that Farnborough and the Hannover Air Show change from a two-year to three-year rotation, leaving the Paris event as it is. At present, though, there seems little prospect of any compromise being reached.

While major companies such as Boeing and British Aerospace expect to attend about 30 exhibitions a year, few of these principal players seem willing to pass up the opportunity of

being seen as an integral part of the established exhibitions. Both Farnborough and Paris are considered unique venues to develop new contacts and consolidate existing business relationships as well as show off new products.

In the final analysis, it is the commercial forces that will decide whether attendance at an exhibition is warranted. If a company is at the beginning of a marketing program, then it is going to be anxious to display its wares. Those air shows that can provide a sufficiently high number and caliber of visitors ultimately will be those that survive in an increasingly overcrowded circus.

Robert Bailey

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EUROBONDS

Signs of Slow U.S. Growth Boost Eurodollar Sector

By JOHN J. DUFFY

Special to the Herald Tribune

LONDON — The outlook for the Eurodollar bond market brightened unexpectedly last week as signs of moderating growth in the U.S. economy calmed investors' fears about higher American interest rates.

The prospect of stable U.S. interest rates makes the Eurodollar sector the only game in town.

The relative weakness of the August employment data and a 0.8 percent decline in the U.S. index of leading economic indicators for July also reported last week constituted the first signs that fears of rampant economic growth and escalating inflation in the United States may be overdone.

Dealers said they were not expecting a flood of offerings, but with the continued demand for dollar paper — especially in the Far East — a steady stream of new issues is likely in the weeks ahead.

This week, for example, should see a \$350 million fixed-rate, 7- to 10-year issue from Crédit Foncier de France, dealers said. Also likely are further dollar offerings from several Japanese banks as well as one or two issues by highly rated U.S. corporations.

While demand for Eurodollar bonds has been especially strong in Asia, U.S. dealers reported that as the dollar has strengthened and interest rates on highly rated, longer-term issues have risen close to 10 percent in recent weeks, U.S. institutional investors have also begun returning to the markets.

"We are moving into a completely different environment," said Simon Meadows, a vice president of Salomon Brothers International in London. "People who haven't bought a dollar bond in two years are coming back into the market."

Last week's Eurodollar activity was generally dollar-related, although a strengthening Deutsche mark prompted several issues in that currency by West German banks.

In the dollar sector, three Japanese banks brought \$500 million of new offerings to market Tuesday. Dealers said the most successful deal was a \$200 million issue of 9 percent, five-year bonds by Japan Development Bank. The issue, launched by Bank of Tokyo Capital Markets, was priced with an initial yield of 4.5 basis points over U.S. Treasury securities of similar maturities.

Growth Slows In U.S.

Report Predicts Strong 3d Period

United Press International

NEW YORK — The rate of U.S. economic expansion slowed in August, but the level of new orders remained high enough "to all but assure robust economic growth for the third quarter," the National Association of Purchasing Management announced Sunday.

The Purchasing Manager's Index declined nearly 3 percentage points, to 56.2 percent from 59 percent in July, marking the second consecutive monthly decline in the rate of growth.

Based on the figures for all of this year, the index is "consistent" with an annual economic growth rate of about 3.7 percent, Mr. Bretz said.

New orders expanded in August for the 39th consecutive month, although at a slower pace than in June and July. The new orders index stood at 59.9 percent, with new export orders primarily responsible for the growth.

The production index in August fell to 58.2 percent. It was the fourth-highest level of the year but significantly lower than the 63.1 percent recorded in June and 62.7 percent in July.

Employment grew in August, but the rate of increase slowed to an index of 50.7 percent from July's 51.7 percent.

Although prices increased for the 25th month in a row, fewer companies reported higher prices in August than did in recent months. The price index fell to 78.7 percent in August from 81.1 percent in July. It was the lowest since March when the index stood at 74.1 percent.



Floor dealers signaling for orders Saturday at the start of stock-index futures trading at the Osaka Stock Exchange. Trading in the futures was strong during the first sessions in Osaka and Tokyo.

Japanese Futures Strong in Debut

Trading Activity Exceeds Expectations in First Session

Compiled by Our Staff From Dispatches

TOKYO — Interest in stock-index futures was stronger than expected Saturday, but institutional investors remained generally cautious as the two major Japanese stock exchanges began trading the futures.

The heavy volume was due to Wall Street's strong performance on Friday, which raised stock prices in Japan, brokers said. Overall trading volume in Tokyo for Tokyo Stock Price Index, or TOPIX, futures was 77,470 contracts, compared with 75,018 for the Nikkei-225 contract in Osaka, according to exchange figures.

But in money terms, the higher value of the Osaka contracts made volume there worth about 2.1 trillion yen (\$15.45 billion), compared with about 1.7 trillion for Tokyo.

The December 1988 contract for the Nikkei-225 futures opened at 27,940 and closed at 27,850. The only other trading was 18 contracts for March 1989, which both opened and closed at 28,080.

Brokers said the heavy concentration of trading on December was expected on the first day of trading. It will take time to work out spreads with more distant months, they said.

That Nikkei index itself, which is based on share prices of 225 selected companies, closed at 27,488.25, up 271.75 points, or 1.4 percent, from Friday's close.

U.S. Oil Prices Skid Below \$15 As Output Soars

Compiled by Our Staff From Dispatches

NEW YORK — U.S. oil prices, which fell to a six-week low of under \$15 a barrel late last week, are poised to continue sliding this week amid accelerated production by OPEC members, industry analysts said Saturday and Sunday.

On the New York Mercantile Exchange Friday, crude oil for October delivery fell to \$14.77 a barrel, the lowest level since March 9, from \$15.34 the previous week.

According to reports Sunday, the increased production and quota cheating by some cartel members, reportedly Saudi Arabia, Kuwait and the United Arab Emirates, has created domestic problems for Riksmann Lukman, the Nigerian oil minister who is chairman of the Organization of Petroleum Exporting Countries.



Riksmann Lukman

A Sunday report in the Guardian, a leading Nigerian newspaper, said Mr. Lukman was being criticized by members of the country's military government, who reportedly felt that he was being too high-minded in refusing to allow the country to deviate from its OPEC quota, despite cheating by other members.

The oil cartel produced about 20 million barrels of crude a day in August, more than a million barrels a day higher than in July and the most in 12 months, according to industry executives, government officials and shipping sources.

The 13-member group's production ceiling is 15.06 million barrels a day for 1988, excluding Iraq, which does not accept a quota and currently pumps an estimated 2.7 million barrels daily.

Iraq and its Gulf War foe Iran are eager to expand oil exports to pay for post-war reconstruction, potentially putting further pressure on prices.

In a report for Monday release, Petroleum Intelligence Weekly said OPEC production was likely to increase this month.

"If OPEC could not come up with a credible, implementable production-sharing plan in 1986 or 1987 or 1988, how on earth can it do it in 1989, with capacity increasing?" he asked.

Paul Vlaanderen, head of the oil industry division of the International Energy Agency in Paris, said, "Stocks are at a point they have not reached since 1982 or 1983."

Oil companies and governments in consuming nations held 3.3 billion barrels at the beginning of July, according to the agency, up 146 million barrels from a year earlier.

Part of the increase represents increased stockpiling by Japanese companies in July, ahead of a tax change that took effect on Aug. 1.

But analysts said other factors also are operating. For example, some thought the extra stocks are a "war cushion," accumulated by refiners that feared a supply interruption because of the attacks on oil tankers in the Persian Gulf.

Those supplies presumably would be available for consumption if Iran and Iraq reached a conclusive peace.

South Africa Gold and Exchange Reserves Fall to Lowest Point Since '86

Reuters

JOHANNESBURG — South Africa's plunging gold and foreign currency reserves, now at their lowest level since mid-1986, are causing deep concern and embarrassment to economic policy makers.

Botswana this month reported that its reserves totaled \$962 million in June, equivalent to 24 months' import cover.

Zimbabwe, whose economy is often portrayed by South African officials as a hopeless case, usually has reserves sufficient to cover at least three months' imports, according to economists in Harare.

South Africa's gold and foreign exchange reserves have plummeted to a level where they were sufficient to pay for only two months' imports.

The main fear of economists and bankers is that the fall will exacerbate a slide in the rand and send inflation soaring.

"Two months' is a crisis," remarked one banker.

The dwindling reserves also embarrass South Africa, the economic powerhouse of the continent, when compared with the healthier import cover ratios of some of its black neighbors.

The sharpest fall came last June when the central bank worried by a marked deterioration in the balance of payments, swapped 1 billion rand of gold reserves for hard currency to meet heavy foreign debt commitments.

The last time the import cover ratio went down to two months was in mid-1986, and that was very close to an all-time low," said David Mohr, chief economist of South African Mutual Life Assurance Co., the country's biggest investment institution.

"Unless it improves substantially," he said, "the economy will remain very vulnerable to capital outflows, and if you don't pay attention to the import cover ratio you run the risk of a collapse in the rand."

A capital drain through foreign disinvestment and heavy debt repayments to overseas banks has already contributed to a steady slide in the value of the rand against major currencies this year.

Moscow Markets MiG-29 at Farnborough Show

By Barry James

International Herald Tribune

FARNBOROUGH, England — Displaying a new determination to use Western sales and marketing techniques, the Soviet Union gave a spectacular aerobatics performance with one of its most modern fighters, the MiG-29, on the first day of the Farnborough air show Sunday, but a demonstration flight by another Soviet plane was aborted at takeoff.

For about 10 minutes, a MiG performed low-level runs at high speed, slow-speed passes at a 25 degree angle for attack, vertical climbs, controlled stalls, a knife-edge maneuver known as a tail slide and a series of spectacular twists and turns with its afterburners glowing bright orange.

In a less impressive performance, a giant Antonov 124 freight plane, the world's largest aircraft, was lumbering down the runway under full power when there was a bang from one of its four engines and flames shot out of the back.

The pilot immediately cut power and braked about 100 yards (90 meters) in front of about 10,000 people who were watching the event. There was no immediate explanation for the mishap, but experts said a compressor surge may have been to blame.

Although the Antonov has appeared in the West before, the event Sunday was to be its first flying demonstration outside of the Soviet bloc. The plane bore the white and blue markings of Aeroflot, the Soviet national carrier.

Earlier Sunday, Rolls Royce unveiled its RB211-524L turbofan engine, which is claimed to be the world's most powerful with a thrust of up to 72,000 pounds.

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Currency Rates

Table of currency rates for various countries including Australia, Canada, France, Germany, Hong Kong, India, Japan, etc.

Other Dollar Values

Table of other dollar values for currencies like Swiss Franc, Dutch Guilder, etc.

Forward Rates

Table of forward rates for various currencies and time periods.

Last Week's Markets

Table showing stock indices and money market rates for the previous week.

Weekly International Bond Prices

Provided by Credit Suisse First Boston Securities, London, Tel.: 01 323 11 30

Table of bond prices categorized by region: Dollar Straights, Australia, Canada, Japan, Scandinavia, Switzerland, United Kingdom, United States, and Yen Straights. Each entry includes issuer, maturity, price, and yield.

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Wall Street Review

Market activity summary including NYSE Most Actives, AMEX Most Actives, NYSE Sales, AMEX Sales, NYSE Divs, and AMEX Divs.

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Euromarts At a Glance. A comprehensive table of international bond prices, categorized by region (Western Europe, DM Zero Coupons, Dollar Zero Coupons, Western Europe (Other), DM Straights, Eurobond Yields, DM Zero Coupons, ECU Straights, and Eurobond Yields).

Vertical text on the right edge of the page, including 'An Inter...' and 'Weak Job'.

New International Bond Issues

Compiled by Laurence Desvillettes

Table with columns: Issuer, Amount (millions), Mat., Coup. %, Price, Price end week, Terms. Includes sections for Floating Rate Notes, Fixed-Coupon, and Equity-Linked.

Weak Jobs Data Boosts Bond Prices

NEW YORK — Bond prices ended last week sharply higher after receiving a big boost Friday from weak employment figures that suggested U.S. economic growth is slowing and eased concerns about the outlook for higher interest rates.

Among intermediate government issues, the price of 10-year notes rose to 101 18/32 from 99 1/2.

U.S. CREDIT MARKETS

6/32. The yield fell to 9.01 percent from 9.38 percent. In the short-term end of the credit markets, the federal funds rate, charged on overnight interbank loans, was slightly higher at 8 1/2 percent, compared with 8 1/4.

Corporate issuance declined on the week. Less than \$1 billion in new issues came to market. New issue yields fell by 15 to 35 basis points, while seasoned corporate spreads were unchanged.

WORLD STOCKS IN REVIEW / Via Agence France-Press

Analysts See Long-Term Downward Trend in U.S. Equities

NEW YORK — Prices on the New York Stock Exchange may advance further in the next few sessions, but market analysts said they expected U.S. equities to decline in the long term.

"One swallow does not a summer make," said Alfred Goldman, a market analyst with A.G. Edwards & Sons. "There is no reason to conclude that the year-old bear market is over."

The U.S. Labor Department reported on Friday that unemployment in the nation rose to 5.6 percent in August, from 5.4 percent in July.

The economy has slowed until they see more than one month's worth of soft economic data," said Mr. Johnson.

Worries About Rising Interest Rates Dominate World Stock Exchanges

Amsterdam

Events in New York, London and Tokyo depressed stock prices in Amsterdam last week, overwhelming several positive factors in the Dutch economy.

Indexes finished lower. Dealers reacted with caution after large falls the previous week, although trading picked up Friday with selective buying.

A recovery on Wall Street Friday, prompted by latest U.S. unemployment figures, led to a reduction in losses in London at the end of the week.

The market was also relatively inactive because many investors were still on holiday.

Volume in the first section of the market averaged 468 million shares a day, compared with 491 million shares the previous week.

Frankfurt

Stocks fell slightly last week as investors remained worried by interest rates and traded with reserve. The DAX-100 index closed Friday at 1,453 points, down 3.1 from the previous Friday.

The Hang Seng Index ended the week at 14,344 points lower at 2,449.89. The Hong Kong Index, which has a broader base, shed 5.83 points to finish at 1,620.53.

Stock prices fell last week in the thinnest trading so far this year. The Comit Index ended at 513.48, down from 526.71 the previous Friday.

The market staged a mild rally late in the week to close on a firmer note.

Share prices tumbled on Thursday, when the Nikkei lost 431.69 yen, its third-largest loss in a single day this year.

Hong Kong

Trading was mixed for most of last week, but both major market indexes finished lower.

Fears of a new increase in British interest rates depressed the market last week, and stocks fell sharply in nervous trading.

Other major concerns also fell. Olivetti was off 3.50 percent, CIR slid 2.73 percent, Pirelli dropped 3.63 percent, Fiat fell 1.92 percent, and Generali was down 1.29 percent.

Bank stocks fared better than most. Union Bank of Switzerland fell 35 to 3,165; Credit Suisse finished off 10 at 2,510, and Swiss Bank Corp. slid 9 to 351.

The mood was somber on the Zurich stock market last week, and the major market indexes fell.

Japanese GNP Said to Fall During Quarter

TOKYO — Japan's economy is believed to have registered negative growth in April, May and June, the first quarter of the 1988 fiscal year, leading newspapers said here Saturday.

YEN: Capital Outflows Exert Downward Pressure on Japanese Currency

(Continued from Page 1) divergence of the yen and European currencies is seen in Japan as less a reflection of differing long-term views of the dollar's prospects than of the contrasting policy stances adopted by the Bank of Japan and the Bundesbank in recent weeks.

CURRENCY: Global Economic Efforts Fractured by Divergent Outlooks

(Continued from Page 1) dollar and to squelch inflationary pressures. Those efforts — in which the Bank of Japan did not participate — appear to have succeeded in calming the markets in the short-term, foreign-exchange dealers said.

U.S. Consumer Rates

Table with columns: Item, Rate. Includes Tax Exempt Bonds, Bond Buyer 30-Day Index, Money Market Funds, etc.

INTERNATIONAL POSITIONS

Table with columns: TITLE, SALARY, EMPLOYER. Lists various international positions and their details.

Japanese GNP Said to Fall During Quarter

The Nihon Keizai and Asahi newspapers quoted senior officials of the government's Economic Planning Agency as saying that the negative growth compared with the January-March period was chiefly due to an increase in imports and a slowdown in public works projects.

YEN: Capital Outflows Exert Downward Pressure on Japanese Currency

But many other analysts contended that the dollar is likely to resume its downward slide after the presidential elections in November, when it would become clear, they said, that progress in curtailing trade imbalances was slowing and new efforts to reduce the U.S. budget and trade deficits were not in the offing.

U.S. Consumer Rates

Table with columns: Item, Rate. Includes Tax Exempt Bonds, Bond Buyer 30-Day Index, Money Market Funds, etc.

The Global Newspaper



NASDAQ National Market

OTC Consolidated trading for week ended Friday, Sept. 2

Symbol	100s	High	Low	Close	Net Chg	Symbol	100s	High	Low	Close	Net Chg
A&W Bd	314.75	314.75	314.75	314.75	+	AA	100	100	100	100	+
ABC	30	30	30	30	+	AAI	100	100	100	100	+
ABCO	30	30	30	30	+	AAJ	100	100	100	100	+
ACC	30	30	30	30	+	AAK	100	100	100	100	+
ACD	30	30	30	30	+	AAL	100	100	100	100	+
ACE	30	30	30	30	+	AAM	100	100	100	100	+
ACH	30	30	30	30	+	AAN	100	100	100	100	+
ACI	30	30	30	30	+	AAO	100	100	100	100	+
ACJ	30	30	30	30	+	AAQ	100	100	100	100	+
ACK	30	30	30	30	+	AAW	100	100	100	100	+
ACL	30	30	30	30	+	AAZ	100	100	100	100	+
ACM	30	30	30	30	+	AAA	100	100	100	100	+
ACN	30	30	30	30	+	AAA	100	100	100	100	+
ACO	30	30	30	30	+	AAA	100	100	100	100	+
ACP	30	30	30	30	+	AAA	100	100	100	100	+
ACQ	30	30	30	30	+	AAA	100	100	100	100	+
ACR	30	30	30	30	+	AAA	100	100	100	100	+
ACS	30	30	30	30	+	AAA	100	100	100	100	+
ACT	30	30	30	30	+	AAA	100	100	100	100	+
ACU	30	30	30	30	+	AAA	100	100	100	100	+
ACV	30	30	30	30	+	AAA	100	100	100	100	+
ACW	30	30	30	30	+	AAA	100	100	100	100	+
ACX	30	30	30	30	+	AAA	100	100	100	100	+
ACY	30	30	30	30	+	AAA	100	100	100	100	+
ACZ	30	30	30	30	+	AAA	100	100	100	100	+
ADA	30	30	30	30	+	AAA	100	100	100	100	+
ADB	30	30	30	30	+	AAA	100	100	100	100	+
ADC	30	30	30	30	+	AAA	100	100	100	100	+
ADD	30	30	30	30	+	AAA	100	100	100	100	+
ADE	30	30	30	30	+	AAA	100	100	100	100	+
ADF	30	30	30	30	+	AAA	100	100	100	100	+
ADG	30	30	30	30	+	AAA	100	100	100	100	+
ADH	30	30	30	30	+	AAA	100	100	100	100	+
ADI	30	30	30	30	+	AAA	100	100	100	100	+
ADJ	30	30	30	30	+	AAA	100	100	100	100	+
ADK	30	30	30	30	+	AAA	100	100	100	100	+
ADL	30	30	30	30	+	AAA	100	100	100	100	+
ADM	30	30	30	30	+	AAA	100	100	100	100	+
ADN	30	30	30	30	+	AAA	100	100	100	100	+
ADO	30	30	30	30	+	AAA	100	100	100	100	+
ADP	30	30	30	30	+	AAA	100	100	100	100	+
ADQ	30	30	30	30	+	AAA	100	100	100	100	+
ADR	30	30	30	30	+	AAA	100	100	100	100	+
ADS	30	30	30	30	+	AAA	100	100	100	100	+
ADT	30	30	30	30	+	AAA	100	100	100	100	+
ADU	30	30	30	30	+	AAA	100	100	100	100	+
ADV	30	30	30	30	+	AAA	100	100	100	100	+
ADW	30	30	30	30	+	AAA	100	100	100	100	+
ADX	30	30	30	30	+	AAA	100	100	100	100	+
ADY	30	30	30	30	+	AAA	100	100	100	100	+
ADZ	30	30	30	30	+	AAA	100	100	100	100	+

(Continued on next page)

NASDAQ National Market

Table with columns: Symbol, Bid, Ask, Net Change, High, Low, Close, Volume. Includes sub-sections for (Continued) and various stock listings.

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Table with columns: Symbol, Bid, Ask, Net Change, High, Low, Close, Volume. Includes sub-sections for (Continued) and various stock listings.

Treasury Bonds

Table with columns: Maturity, Bid, Ask, Yield, % Chg. Lists various Treasury bond instruments.

Mutual Funds

NEW YORK (AP)—The following mutual funds, as of Sept. 4, 1988, were among the top 100 funds...

Large table listing mutual fund performance metrics including fund names, assets, and returns.

American Exchange Options

Table with columns: Option & price, Calls, Puts. Lists various American exchange options.

Chicago Exchange Options

Table with columns: Option & price, Calls, Puts. Lists various Chicago exchange options.

Chicago Exchange Options

Table with columns: Option & price, Calls, Puts. Lists various Chicago exchange options.

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MONDAY SPORTS

Mecir and Leconte Fall Before Rain Disrupts U.S. Open

Compiled by Our Staff From Dispatches NEW YORK — Light but persistent rain forced officials of the U.S. Open to cancel all play on Sunday.

Twelve singles matches — eight men's and four women's — were rescheduled for Monday. Top-seeded Ivan Lendl was scheduled to meet Scott Davis and Andre Agassi, the fourth seed, was to have faced Johan Kriek in third-round matches.

In the women's draw, second-seeded Martina Navratilova was matched against African Elina Reinach and fifth-seeded Gabriela Sabatini against Stephanie Rehe.

The weather forecast called for rain throughout the day, ending sometime on Monday, the Labor Day holiday in the United States. All-day rain also pre-empted most of the first round of play last Monday.

On Saturday, the Grandstand Court added to its reputation as upset headquarters. Seven seeded players among the men and women have been beaten there so far this year.

Henri Leconte, seeded 10th, was the latest victim, falling to John Frawley, 6-3, 6-4, 6-3. He was the fourth seeded men's player to be defeated by an unseeded Australian player, after Boris Becker, John McEnroe and Yannick Noah. Becker, seeded fifth, and McEnroe, 7, and Jonas Svensson, No. 13, had earlier lost on the Grandstand Court.

Ninth-seeded Lori McNeil was the women's Grandstand sacrifice, losing to Judith Wiesner, 7-6, 3-6, 6-4.



A's catcher Ron Hassey lost the ball in a collision with Yankee Willie Randolph, who then scored.

Jackson Wins 20th for Reds

The Associated Press

CHICAGO — Danny Jackson became the National League's first 20-game winner this season and went four-for-five, including two hits during Cincinnati's nine-run

homer and Billy Hatcher drove in two runs to lead the Astros. The victory moved Houston to within five games of first-place Los Angeles in the National League West.

SUNDAY BASEBALL

Los Angeles won the first game of the season, 5-4, on Sunday. Luis Quinones paced Cincinnati's 18-hit attack with a three-run double and two-run single. Jackson, who scored four runs, entered the game with nine hits in 74 at-bats, a .122 average.

Bob Knepper pitched five innings and allowed three runs and eight hits. Dave Smith, the fourth Astros pitcher, got the last three outs for his 24th save.

Expos 3, Giants 2: In Montreal, Andres Galarraga hit a two-run double and Brian Holman won for the first time in a month as the Expos swept a three-game series with San Francisco.

The Giants have lost nine of their last 11 games to drop into fourth place in the National League West.

Holman allowed seven hits in seven innings for his first victory since Aug. 4 and Tim Burke finished for his 14th save. The Expos took the lead off Rick Reuschel, 1-7, when they sent eight batters to the plate and scored three runs on five hits in the fourth inning.

Indians 3, White Sox 2: In the American League, in Cleveland, Dave Clark homered with one out in the ninth to lift the Indians.

Clark connected to left on a 1-0 pitch from reliever Barry Jones for

his second home run of the season. Brewers 6, Tigers 1: In Detroit, Ted Higuera allowed one hit in seven innings for his sixth straight victory and B.J. Surhoff hit a three-run homer as Milwaukee completed a sweep of their four-game series with the Tigers.

The Brewers have won six straight and pulled to within four games of the first-place Tigers in the American League East. With the Tigers dropping 11 of 13, Milwaukee has picked up seven games in 14 days.

Milwaukee, which plays only American League West teams the rest of the season, beat Detroit for the sixth straight time and finished 8-5 against the Tigers.

Higuera walked two, struck out six and allowed only a fifth-inning single to center by Mike Heath. Chuck Crim gave up three hits in two innings.

Surhoff's fifth-inning homer was his fourth of the season and came after Rob Deer and Jerry Meyer were walked by Walt Terrell.

Blue Jays 9, Rangers 7: In Toronto, George Bell hit a grand slam in the bottom of the ninth and Rance Mulliniks' two-run double highlighted a five-run eighth as the Blue Jays rallied against Texas.



Henri Leconte, left, the 10th seed at the U.S. Open, grimaces after losing a point to John Frawley of Australia, above, who earlier in the tournament had upset Paul Anacone. Frawley won, 6-3, 6-4, 6-3. Leconte was the fourth men's seed to be ousted by an Australian.



SCOREBOARD

FOOTBALL

Selected College Results

East American (Ill.) 48, Clarkson 28; California, Pa. 14, Wayne, Mich. 3; James-McLain 24, Duquesne 14; Concord 4, Lock Haven 3; ...

BASEBALL

Friday's and Saturday's Major League Line Scores

Table with columns for team names and scores for various MLB games from Friday and Saturday.

TENNIS

U.S. Open Results

Men's Singles: Second Round. Anders Jorund (SWE), Sweden, def. Richey Reneberg (USA), 6-3, 6-4; ...

TRANSITION

Baseball American League: NEW YORK—Recalled Houston Pina and Scott Hadden, pitchers, from the 30-day disabled list; ...

Major League Standings

Table showing the current standings for the American League and National League.

Surging Brewers Down the Slumping Tigers

Compiled by Our Staff From Dispatches

DETROIT — Jeffrey Leonard hit a two-run homer, Jerry Meyer hit a three-run and an RBI single, and Paul Mirabella sparked in long relief here Saturday night to get the surging Milwaukee Brewers a 7-3 victory over the slumping Detroit Tigers.

Milwaukee built a 2-0 lead by the 11th home run to give the Brewers a 7-2 lead.

Detroit scored twice in the third on Whitaker's two-run double that followed singles by Dwayne Murphy and Tom Brookhous.

Athletics 5, Yankees 4: In Oakland, California, Jose Canseco hit his major league-leading 35th homer and Carney Lansford ripped a pair of doubles to rally the A's.

Twins 8, Royals 6: In Minneapolis, Jim Dwyer's two-run, pinch-hit single capped a six-run seventh inning that paced Minnesota. Three Kansas City pitchers failed to get an out in the seventh as the Twins sent 11 batters to the plate.

Blue Jays 9, Rangers 7: In Toronto, Rance Mulliniks' three-run homer broke a sixth-inning tie and reliever Tony Castillo earned his first major-league victory.

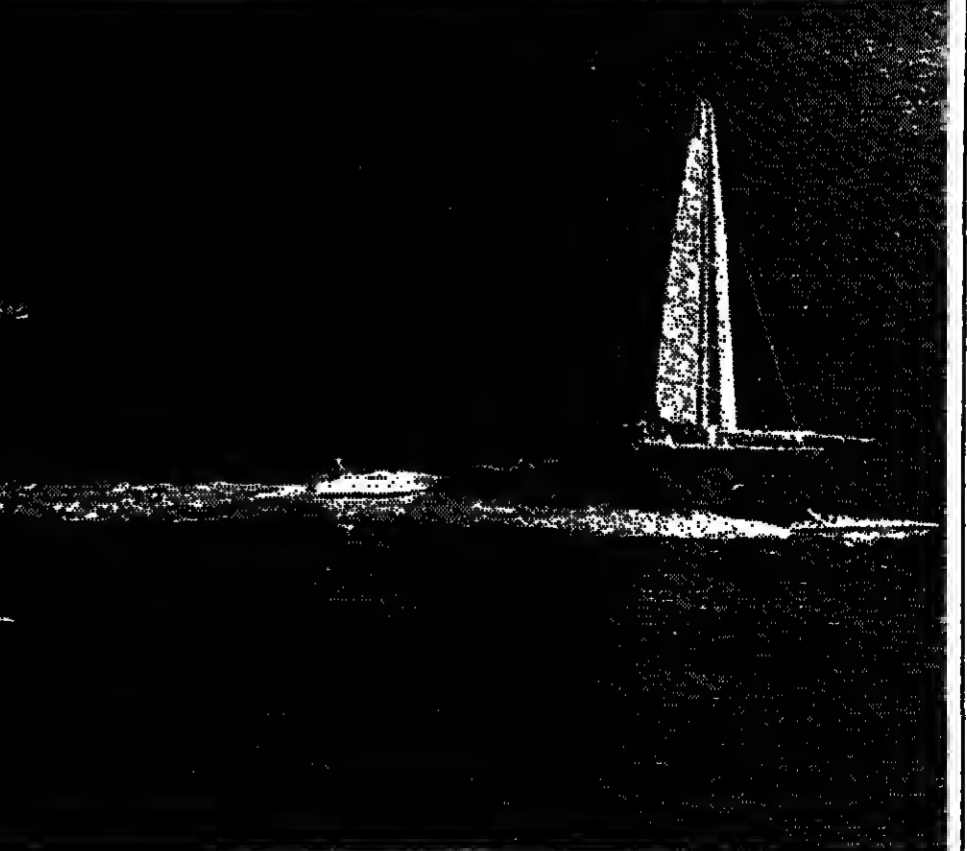
Mariners 1, Orioles 0: In Seattle, Mark Langston fired a three-hitter and Mickey Britted doubled in the only run in the sixth. Langston walked four and struck out eight in pitching his sixth complete game and first shutout of the season.

Angels 2, Red Sox 1: In Anaheim, California, Wally Joyner singled home the go-ahead run with two out in the eighth to lift California. The victory prevented Boston from moving into a first-place tie with Detroit in the American League East.

Mets 2, Dodgers 1: In the National League, in New York, Dwight Gooden got help from Randy Myers on a six-bitter as he defeated Los Angeles for the third time this season. Gooden gave up six hits, walked one and struck out five in eight innings.

The Brewers scored in the seventh when Jim Gantner singled, advanced to second on a groundout by Dale Swann and scored on Mo-litor's single.

In the eighth, Deer singled off reliever Mike Hemmick and stole second and Greg Brock was intentionally walked. Meyer then hit his



Sail Away The two Stars & Stripes catamarans practicing for this week's America's Cup race against New Zealand in waters off San Diego. Dennis Conner, the skipper of Stars & Stripes, will sail the 60-foot hard-sail catamaran at right in a challenge by Michael Fay of New Zealand, who will be sailing a 132-foot monohull. The race begins Wednesday.

SOCCER

ENGLISH FIRST DIVISION

Arsenal 3, Aston Villa 3; Coventry 2, Everton 1; Liverpool 1, Manchester United 0; ...

AMERICAN LEAGUE

NEW YORK — Recalled Houston Pina and Scott Hadden, pitchers, from the 30-day disabled list; ...

NATIONAL LEAGUE

NEW YORK — Recalled Houston Pina and Scott Hadden, pitchers, from the 30-day disabled list; ...

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